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### MYXOEDEMA: A SEQUEL.<sup>1</sup>

By ALFRED A. LENDON, M.D. (London),  
Adelaide.

At a meeting of this Branch some thirty years ago a symposium took place on the subject of myxoedema, three members read papers and several others contributed to the discussion. The papers attained immortality, for were they not quoted in the first edition of Clifford Allbutt's "System of Medicine"? I do not know that there is anything very substantial to add to what was said in 1894, but the death in 1922 of one who was believed to be the first person actually recognized in Australia as suffering from myxoedema and who certainly was the first patient reported as having been cured by the administration of thyroid gland, suggested looking into my notes to see whether there might be anything of interest to be gathered from them.

This first patient came under my observation in 1883.<sup>(1)</sup> When the real nature of the condition was first detected I cannot say, but I remember that when about this time the patient went to England, the doctor whom she consulted, wrote to me directly

he saw her (I had mentioned the diagnosis) that he realized at once that he had already three such patients in his own practice, the nature of whose condition he had not previously understood. It was some time after her return to Australia that I commenced (in 1892) Dr. George Murray's method of injection of thyroid extract. I used to obtain the glands once a week from a friendly butcher in Brown Street who killed the sheep on his own premises. With but indifferent aseptic precautions I made a glycerine extract and then injected a random dose. From July, 1892, to April, 1893, the treatment was carried out with great benefit and then it was found that thyroid substance taken by the mouth was equally efficacious; soon afterwards "Burroughs Wellcome and Company" stepped into the breach. The patient, Mrs. W., died at the age of eighty-six of cerebral haemorrhage; she was never able to dispense with the use of the thyroid tabloid, but only required about 0.3 grammes (five grains) three times a week. If she discontinued them entirely for a short time she was conscious that her symptoms were gradually returning.

That myxoedema does not necessarily shorten life is further illustrated by the case of Mrs. F., who has been under thyroid treatment for almost a third of a century and has attained to the age of

<sup>1</sup> Read at a meeting of the South Australian Branch of the British Medical Association on April 30, 1925.

ninety-one. Her case further suggests that myxoedemias are not necessarily bad subjects for operation, for at the age of sixty-nine I operated upon her for an appendiceal abscess. Another point of interest is that before the signs of myxoedema appeared I had noticed symptoms of hypothyreoidism in her penultimate child; in his case the complaint seemed arrested.

As another instance of longevity I may quote the case of Mrs. R. who is now eighty-six. For at least five years she has dispensed with the use of thyreoid tabloids and yet the myxoedema has not returned. What has occurred? Can her thyreoid gland have recovered its function? Did the long years of artificial supply of thyreoid material allow a healthy portion to become hypertrophied? This is the only case I know of in which the tabloids could be left off with impunity.

Mrs. McK. died it is true and she suffered from the most intense form of hypothyreoidism I had ever seen. I discovered her accidentally at Mannum in 1893 and promised her a cure, but to my surprise she did not improve. The explanation was simple. Her doctor simply told the local butcher to supply the patient with "the glands near the windpipe." To "mak siccer" he used to send her every day a sheep's pluck, which term I fancy comprehends all the thoracic viscera as well as the liver and spleen, but I may be mistaken. From this assortment she selected the submaxillary glands as the most enticing morsel and devoured them raw. The only result was that she complained of dribbling from the mouth. When the proper glands were pointed out she rapidly recovered. Soon afterwards we were honoured in Australia with a visit from a former Adelaide resident, the son of a tailor I believe who had migrated to the United States and there blossomed out into a self-styled bishop of an entirely new brand of patent religion.

"Bishop" Dowie preached abstinence from alcohol before it became compulsory in the States. Whilst, perhaps, we may all be agreed with regard to this doctrine, we may be less unanimous as to his prohibition of smoking, whilst his crusade against all drugs might inconvenience our profession. He convinced Mrs. McK. of her unrighteousness and she abandoned the use of thyreoid. Presumably he persuaded his new-found disciple to migrate with him. At all events I heard that she died shortly after her arrival at Zion City, United States of America.

The difficulty of identifying the gland in those pioneering days is further illustrated by another case of mine. A hospital patient, having suffered a relapse, thought that she would be able to get the gland for herself from her own butcher in the country, but was surprised to hear that it was out of season. Nothing daunted she took a sample for his inspection, when she was informed that the delicacy to which she was so much indebted for her improvement was a lamb's testis.

A word as to diagnosis. A man came down from the far north and stayed in Adelaide with his aunt.

She at once pronounced him to be suffering from the same complaint as herself and I was able to confirm the diagnosis. On the other hand in two instances medical practitioners have overlooked obvious cases and the explanation, I think, is simple. Patients whom we are in the habit of seeing frequently alter in appearance so gradually that the insidious change is not noticed, unless they happen to come to us after a considerable interval.

I have not seen much evidence of heredity, only one case of direct descent and two of collateral relationship.

#### Reference.

(1) A. A. Lendon: "Myxoedema and Sporadic Cretinism," *Australasian Medical Gazette*, May 15, 1894, page 152.

#### MYXOEDEMA.<sup>1</sup>

By SIR JOSEPH C. VERCO, M.D. (London), F.R.C.S. (England),

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In the *Australasian Medical Gazette* of May 15, 1894, thirty-one years ago, may be found three papers by Dr. A. A. Lendon, Dr. T. W. Corbin and myself, on myxoedema, written not very long after the treatment by thyreoid extract had been discovered. We were able to report most satisfactory results. They were practically cures; all the symptoms disappeared and the patients looked and felt well. The only evidence of absence of cure was the necessity for continuance of administration of the drug which happily was no difficulty, nor even an inconvenience.

Twenty-one years afterwards, in 1915, the title of one of the extension lectures at the University on the "Romance of Medicine" was the "Thyreoid Body and Internal Secretions," in which was popularly reviewed the wonderful and interesting story of the gradual advance in knowledge of this gland, its diseases and their treatment.

The next year I showed at a meeting of the Branch a patient who had recently come under my notice and whose condition might be considered midway between cretinism and adult myxoedema. As no report was made at the time I will give the history now.

The patient came under observation at the end of 1915. She was quite well until nine years of age, when she had "a bad cold" and had severe fits in which she would fall. The doctor diagnosed brain disease. She stopped growing then, being one hundred and thirty-five centimetres (fifty-four inches) in height. The fits ceased when she was thirteen years old; she became very pallid and puffy and the doctors declared her incurable from heart and kidney affection. When first seen at the age of twenty-nine she was quite hairless and wore a wig. She had in marked degree the classical features, so as to look cretinous, she was very bulky, weighing 35.3 kilograms (seventy-eight and a half pounds), she could do no work, was very liable to stumble on attempting to walk and often fell in the street if it was rough or the wind was strong; she had had

<sup>1</sup> Read at a meeting of the South Australian Branch of the British Medical Association on April 30, 1925.

no periods. With difficulty she was induced to submit to treatment with thyreoid tabloids and consented only because she was assured that her hair would grow again and she would be able to abandon her wig. She began to improve at once and now at the age of forty she does all the work of the house and waits upon her invalid mother. She is a mentally active little woman and physically as busy as a bee, trots along the street at an unusually brisk pace and has quite a rapid utterance. During the last nine years she has cut several teeth. These were evidently very late in coming to replace her milk teeth which were late in falling. Her menses began after she commenced taking her thyreoid tabloids and have since been quite regular and normal. Her hair began to appear at once and in nine months had grown to ten centimetres (four inches) and now after nine years is 37.5 centimetres (fifteen inches) long and is fine and smooth. She has not gained in height at all. Evidently her disease at its onset when she was nine interfered with the growth of her epiphyseal cartilages just as in cretinism, so that her bones did not increase any more in length. As she did not begin to take her thyreoid until she was twenty-nine, her cartilages had been fully ossified for about six years and they could not then get longer, so she remained stunted, though as she says with a smile of pride, she is just the same height as Queen Victoria.

A sister was treated by another practitioner for exophthalmic goitre by X-rays twice a week with a total of twelve exposures and was cured.

A few other new cases may be recorded.

E.M., aged thirty-six, unmarried, had been under the care of a medical man in Adelaide and another in Broken Hill for four or six years and given up as the subject of incurable heart and kidney disease. She was manifestly myxedematous and was assured that within three months she would be feeling quite well. She was put on a 0.3 grammie (five grain) tabloid each day for three days, then 0.6 grammie (ten grains) for four days, then 0.9 grammie (fifteen grains) for twenty-one days. By this time she had lost 5.4 kilograms (twelve pounds) in weight. After this she took one tabloid daily for two weeks and lost 2.7 kilograms (six pounds), then six a week and then five a week and lost 0.67 kilograms (one and a half pounds), next four a week and lost 0.45 kilogram (one pound). Finally she was given a tabloid every other day for two weeks and retained her weight. In the meantime she had lost all the signs and symptoms of her complaint. She left town with advice to take a tabloid every other day. Two years afterwards she was *in statu quo*. Now, twelve years after being first seen by me and sixteen or eighteen years after becoming ill, she feels quite well, but has to take a 0.3 grammie (five grain) tabloid daily. Her climacteric occurred four or five years ago without trouble, she has gained 7.4 kilograms (sixteen and a half pounds) in weight since her last visit, but is 4.5 kilograms (ten pounds) lighter than when first seen for her illness.

A married lady, *atatis* forty-one, complained that her fingers felt as though they were full of dough. She had harsh skin, mumbling speech, bluish lips and baggy eyes. She was about two months pregnant. She was put on thyreoid and her weight fell from sixty kilograms (one hundred and thirty-four pounds) to 54.4 kilograms (one hundred and twenty-one pounds) in less than two months in spite of her gestation. After her delivery she had abscesses in both breasts, having weaned the child because there seemed to be no milk. Fifteen months after this she had another child which she did not suckle, because she had not much milk and it did not seem much good. She had taken no tabloids for the last two months of pregnancy nor for two months since delivery and the myxedema was worse than when first seen, so she was put on thyreoid extract again which soon cleared up the condition. She has had to take them ever since. She is now fifty-four years of age. Her climacteric occurred five or six years ago. Though her doctor laughs at the idea of myxedema, she still takes her 0.3 grammie (five grains) tabloid once a week and knows she must have it to stave off her symptoms.

It seems to me that a woman should take just the same dose of the substance during her pregnancy and lying in as at any other time; it is not a drug, but a secretion essential to a healthy bodily state.

A married lady of sixty-five consulted me in 1918. She suffered two years before from diarrhoea and under medical advice had been taking "thyreoid gland extract and castor oil"; she had lost 12.6 kilograms (two stone) in weight and had been told to discontinue the thyreoid. When seen by me she was very weak and had the classical signs of myxedema including the facies and big tongue and a clammy feeling in her mouth as though the saliva were too thick. She had also slight giddiness, noises in the head, a muffled feeling in the ears and dimness of vision. Her weight was 66.4 kilograms (one hundred and forty-seven and a half pounds). She was kept in bed, put on 0.15 grammie (two and a half grains) of thyreoid extract daily and a cardiac tonic of tincture of digitalis and strychnine. She gradually improved under this small dose of thyreoid, lost 8.5 kilograms (nineteen pounds) in weight in five and a half months and was able long before the expiry of that time to be about the house and do her work with freedom from nearly all her symptoms. Here without doubt the stoppage of her thyreoid was responsible for the return of her weakness and distresses which disappeared on its resumption. Now, after seven years at the age of seventy-two, she feels well and is quite capable, but has to take her 0.15 grammie (two and a half grains) of extract daily, otherwise her strength fails.

Several points have been suggested by the experience of the last thirty-one years and the various patients seen, a few only of whose histories have been related in brief.

As regards heredity, though not by any means marked, there appears to be some family predisposition to myxedema. In its most intense form as cretinism it is certainly to some extent familial, several children in a household being affected, though this is uncommon. If, however, a parent is myxedematous one or several of the children may have such a tendency to it during their adolescence as to need thyreoid tabloids to prevent bulkiness and hebetude and associated symptoms and may have to continue its use throughout their mature lives.

Also when one child in a family is myxedematous or cretinous another may have some degree of exophthalmic goitre.

There seems also to be a tendency to haemorrhage in this condition, generally manifesting itself as too free menstruation. This may sometimes amount to serious flooding even in young girls, lasting sometimes through all the usual intermenstrual period and this may disappear under thyreoid treatment. Occasionally such free menstruation may be accompanied by epistaxis and this will cease when the former is controlled.

Many years ago the late Dr. Sydney Jamieson lent me a brochure by a French author on hypothyreoidism and among his suggestions was this, that it seemed to have a causal relation with post-nasal adenoids and enlarged tonsils.

A young woman suffered with very profuse menstruation; cervical dilatation revealed an intrauterine adenoid condition which was subjected to curetting. But after a few months she was as bad as before and it seemed useless to repeat the operation. Remembering the hypothyreoid suggestion she was treated with thyreoid tabloids as for

myxoedema, though she had none of its classical features. Menstruation became normal and she has since married and had a fairly large family and no further trouble.

In several instances myxoedema has been associated with nervous symptoms. In its typical form one of its striking manifestations is mental hebetude. The patient thinks and talks and acts very slowly, as though all the mechanism over which the nervous system presides were clogged with the so-called "mucin" from which the disease derives its name.

But in some cases the condition is one of derangement.

A lady was brought to town by her husband because she was out of her mind and taken to the late Dr. Cleland to be detained at the asylum. But the doctor thought such precipitancy undesirable and referred her to me. My impression after examination was that she was somewhat myxoedematous. She had thyreoid treatment and was very soon quite well.

Two young patients have been subject to epileptic seizures. One loses them when she is under the influence of thyreoid and is liable to their recurrence on its discontinuance; the other had severe epileptic fits from the age of nine until thirteen. Then she became definitely myxoedematous, though this condition was not recognized until she was twenty-nine years of age. Though now she is cured of her myxoedema as far as cure is possible, she still has attacks of her epilepsy, though they are very mild.

My impression is that myxoedema so-called is only one syndrome and though it is the most manifest of the complaints due to hypothyreoidism, this is also responsible for many other manifestations not usually attributed to it, but which might be dissipated by thyreoid medication.

Myxoedema is due to lack of a certain amount of some substance essential to a normal physical state and the remedy consists in the administration of this substance in such quantity as will supply that lack and so lead to the disappearance of all the signs and symptoms caused by that lack. But when all these have disappeared the patient is not cured. She is no more cured of her disease than when her case was first taken in hand. Discontinue the administration and her symptoms are soon as severe as at first. The disease is an organic affection, an atrophy of the thyreoid gland and is incurable in the present state of our knowledge or rather of our ignorance. It is quite different from an infectious disease. Through this we steer a patient and he is not only cured, but generally immune from another attack. It is quite different from malaria or syphilis which we can cure with quinine or arsenic. The disease in myxoedema is organic and permanent and the deficiency of natural thyreoid secretion must be artificially supplied, sufficiently and permanently.

All this is commonplace and well known, but certain corollaries follow which, if as well known, are liable to be forgotten or unheeded by us.

First of all we should remember that all degrees of severity may occur, depending upon the degree of deficiency of glandular secretion. Hence the diagnostic signs and symptoms may be so few and slight as to be overlooked, whereas others, such as epilepsy, mental aberration or haemorrhage, may be

striking. Hence we should be alert to recognize not only the "frank," but these *fruste* forms of the complaint; not only the marked, but the masked cases, lest we overlook the true nature of the latter and find ourselves at fault, treating the epilepsy, the insanity and the haemorrhages as substantive diseases instead of treating them as related to a myxoedema, the mild manifestation of which we have failed to detect.

Secondly, when a case of long duration is taken in hand, the true nature of which has not been hitherto recognized, the patient may be so ill as to be unable to move about the house or even to rise from her bed without faintness or fainting. The initial doses should be small, 0.06 or 0.12 grammes (one or two grains) a day, otherwise a catastrophe may ensue. The dose can very soon be increased to 0.6 or 0.9 grammes (ten and to fifteen grains) a day and the apparently doomed patient may be found rejoicing in her ability to stand the whole day at the wash-tub.

Thirdly, when all the symptoms have nearly disappeared under our somewhat massive dosage, symptoms which have gradually become aggravated and intense during a long period of deficiency of internal secretion and which we have been dissipating by much more than the natural supply of such secretion, we begin to reduce gradually the artificial supply and continue this reduction until we are satisfied that we have reached the minimum dose compatible with health, that is the exact quantity which the patient's thyreoid gland is failing to supply. To determine this amount accurately will demand occasional visits at progressively more prolonged periods for observation until certainty has been reached. Otherwise there will be a gradual relapse because the dose is too small or there will develop the opposite condition of hyperthyreoidism because it is too large, for either of which consequences the physician must deem himself responsible and blameworthy. We are using a very potent drug, potent both for good and ill and we ought—so to speak—"keep our finger on the patient's pulse" and regulate the thyreoid supply according to the individual need.

Fourthly, the patient must be thoroughly impressed with the truth that her thyreoid tabloids must be taken permanently and regularly, however well she may feel, that her sense of improvement and well being is the proof of her need of the drug, the discontinuance of which will be followed by a recurrence of all her previous troubles. Not to warn the patient and indelibly impress this upon her is a grave dereliction of duty on our part. On more than one occasion my patient has shown more *savoir faire* than the medical man under whose care she has subsequently come. He finds her taking thyreoid tabloids and learns from her that she has myxoedema, but seeing her absolutely free from all signs and symptoms tells her she has nothing of the kind, laughs at her fancy and that of her earlier adviser and tells her to give up her tabloids. Should she follow his unsound advice, both she and

he will soon have occasion for regret; she will gradually get a recurrence of her symptoms and he a well-deserved loss of prestige. But more often she has previously tried the experiment on her own initiative and knowing the result which would certainly follow its repetition, wisely refuses his advice which is discounted by the cure and injunction of her previous medical attendant and her own little experiment. The reason why she has no evidences of myxoedema is not because she has "nothing of the kind," but because she is taking her thyroid and this is the reason why she should continue it and not why she should leave it off.

One other consideration may be borne in mind. We treat with tabloids. In one of my cases results had been very satisfactory for some time, then the patient, though taking her tabloids according to prescription, began unaccountably to retrogress. The explanation was a change in the brand of tabloids used. Purchase of the first manufacturer's products resulted in a return of her improvement. By a simple test the amount of active principle in a thyroid tabloid can now be determined. Its application may reveal a barely perceptible trace in one maker's sample and a well marked reaction in another's. Remember this possibility and if deemed advisable have the test applied and if necessary change the brand.

#### DIATHERMY OR THERMO-PENETRATION IN THE TREATMENT OF DISEASE.<sup>1</sup>

By F. J. STANSFIELD, M.R.C.S. (England),  
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Hobart.

I WANT this evening to introduce to your notice a matter which, I venture to think, is of considerable interest and importance to the medical profession, namely, diathermy.

Diathermy or thermo-penetration is a comparatively recent addition to the armamentarium of the medical man and particularly of the physicist. Yet it is one which has already proved its usefulness beyond all doubt, and is therefore entitled to our serious and patient inquiry.

To some of my hearers it may be quite unnecessary to offer a definition of the terms diathermy and thermo-penetration, but there are others present probably who have never before had their attention drawn to the subject. For the benefit of these I will attempt to explain exactly what is meant by these terms and briefly consider the nature of the particular form of electrical energy used, the manner in which it produces its effects and in a very general way describe the apparatus necessary to the generation of this energy. I will then go on to indicate some of the conditions which are suitable to this form of treatment.

#### The Nature of Diathermy.

What then is meant by the terms diathermy and thermo-penetration? Literally they mean "through heat" or penetrating heat and herein lies the great difference between diathermy and the actual cautery. With the latter one can apply heat to the surface, but with diathermy one can generate heat in the tissues at any depth and to any degree, from the gentlest warmth to the point of actual coagulation and destruction.

Now let us consider the nature of this particular form of electrical energy which we call diathermy. In doing so I must first remind you of a fact with which you are probably quite familiar already, namely that an electrical current, constant or interrupted, possesses the power to stimulate the tissues of the body, especially the excitable tissues, muscle and nerve.

It is quite impossible to increase the strength or more correctly speaking the density of such a current to any great extent without causing extremely disagreeable and even painful sensations. Certainly it is out of the question to use either the constant or the ordinary interrupted current of such density as to be capable of raising the temperature of the tissues.

This will be at once apparent when I point out that if the constant current be led through the skin by way of an electrode two and a half centimetres (one inch) square in area and a current of ten milliampères passed, a stinging pain is produced, whilst if the current be increased to fifteen milliampères the pain becomes intolerable.

Now it is known that in order to raise the temperature of the tissues to any useful degree at least 400 milliampères are required. From this you will see that in order to be of any use for the purpose of raising the tissue heat the ordinary electrical current must be modified in some way and this modification constitutes what we know as the diathermy current.

It has been found that the constant current is totally unsuited for this work. The current must be interrupted. However, the ordinary interrupted or faradic current is equally useless for the reason already mentioned, namely that the density cannot be raised sufficiently owing to the pain caused and the violent muscular contractions induced. Now in what way is this ordinary interrupted current modified in order to make it suitable? In the first place let us inquire why the faradic current possesses those qualities which make it unsuitable. In other words why does it produce painful and violent muscular contractions when the density is increased beyond a certain point? The reason is that the interruptions of the current are slow and consequently the periods during which the current is flowing, are long enough to stimulate the excitable tissues and thus cause discomfort without producing the desired effect of raising the temperature.

Now it has been determined that if the alternations be increased to five thousand per second the muscles contract only feebly, whilst the stinging pain is not felt. If the frequency is still further

<sup>1</sup> Read at a meeting of the Tasmanian Branch of the British Medical Association on April 17, 1925.

increased to fifty thousand per second, there is no perceptible stimulation of the tissues at all. The reason for this is that the duration of current flow in any given direction is so short that unless the density is greatly increased it is unable to produce a stimulating effect. Thus a critical period is eventually reached beyond which the current loses all power to stimulate, whatever its density may be. What the exact critical duration of current flow is in the human subject is not known, but it may be taken that where the oscillations are one hundred thousand per second the current, however strong, has lost all power to stimulate the excitable tissues. In other words, an electrical current which is applied to muscle or nerve for one one hundred-thousandth part of a second only, is absolutely powerless to produce any effect however great the current may be. If, however, these fractional applications are sustained for some time then a very decided effect is produced, but the effect is simply to raise the temperature of the tissues. How this rise of temperature takes place is probably as follows. One of the chief characteristics of this particular form of electrical energy is that it does not necessarily take the path of least resistance, but rather chooses the shortest and most direct route between the two electrodes. Thus if you place two electrodes of equal size one on either side of the knee joint and pass the diathermy current it will be found that the oscillations pass directly from one electrode to the other, ignoring, so to speak, the resistance of the intervening tissues. Probably the path of least resistance in this case would be over the interval of skin surface between the two electrodes, but the diathermy current takes no thought of this. It goes by the shortest route, preferring to overcome the resistance in its path.

Now it is this overcoming of the resistance offered by the tissues which generates the heat in them, just as the overcoming of resistance of the ordinary town supply as it passes through the wire of your radiator raises its temperature even to red heat.

To summarize we may say that the diathermy current is an interrupted current of the alternating type, the oscillations of which are exceedingly rapid, probably quite a million per second, of relatively low voltage and high ampérage.

From what I have already said it will be apparent that the object of the diathermy current is to generate heat in the tissues. This can be done successfully and can be so controlled with the modern apparatus at our disposal that we can apply the gentlest heat or heat sufficient to cause actual coagulation.

For this reason diathermy has found a very large field of usefulness. It may be successfully used in either medical or surgical conditions, as I will show later when referring to the various types of disease which are suitable for the treatment.

I may mention here that the temperature of the whole body may be raised or the heat may be so localized as to affect the smallest area only.

If it is desired to raise the temperature of a part of the body a few degrees only, so that its vitality

is not impaired, then electrodes made of sheet metal are placed so as to include between them the part to be heated. If the electrodes are not too small the density of the current passing between them will be low and the parts will not be unduly heated.

If, however, it is desired to raise the temperature of any abnormal tissue, such as a growth, simple or malignant, to a degree sufficient to kill it, one of the electrodes is reduced to the size of a disc three to six millimetres (one eighth to one quarter of an inch) in diameter or even smaller. The current density will be very great in the region of this small electrode and the heat will be sufficient to coagulate and destroy.

The sensation produced by the passage of the diathermy current through the body is simply one of heat. There is no unpleasant tingling and no muscular contraction. In conditions which we may describe as surgical, where it is desired to generate sufficient heat to destroy, the sensation is, of course, distinctly painful and in most cases necessitates an anaesthetic, local or general.

#### Apparatus Necessary for Diathermy.

Perhaps it may not be out of place here to say a few words about the apparatus necessary for the production of the diathermy current.

In order to produce a degree of diathermy sufficient for medical purposes, an apparatus that can give a current of two and a half to three ampères is required. From what has already been said it is evident that if a current of this magnitude is to be passed without danger through the body it must alternate at least one hundred thousand times per second and it must have a relatively low voltage. A current of high frequency of alternation can be obtained by means of a condenser discharging through an inductance. The device known as the d'Arsonval transformer, consisting of a pair of Leyden jars, the outer coatings of which are connected by a stout wire solonoid, will provide a current of sufficiently high frequency of alternation. The current thus produced will, however, have little or no diathermy effect because the oscillations are not sustained. The Leyden jars have a very small capacity and the time which they take to discharge through the solonoid, is exceedingly brief, namely one fifty-thousandth part of a second. During this period there is a train of high-frequency current oscillations. Assuming the jars are charged from a large spark coil (as is usually the case when the d'Arsonval transformer is used for medical purposes) fitted with a mercury break which interrupts the primary circuit one hundred times each second, it follows that during each one hundredth part of a second when the primary circuit is broken there is a period of only one fifty-thousandth of a second occupied by high frequency oscillations. Calculated on these data a patient who is connected to the two terminals of the solonoid for half an hour, will receive the high-frequency current for 3.6 seconds only.

Obviously treatment from this type of apparatus would be impracticable. Further the Leyden jars are charged to an unnecessarily high voltage, whilst

the current of discharge between the outer coatings of the jars reaches a strength of only half an ampère. A current of this strength flowing for very brief periods with long intermissions cannot perceptibly raise the temperature of the tissues.

Most modern diathermy machines are now made with a one and a half kilowatt transformer with a series spark gap, condenser and d'Arsonval solenoid. In the latest machines the spark gaps are made adjustable. The character of the spark or oscillation produced by these machines is what is known as damped or quenched, that is to say the hot gases which are generated, are immediately removed from the spark gap and the current flow stopped, just as an ordinary arc may be blown out by a current of air. Spark gaps of such a character make possible a much more rapid succession of sparks than when the hot gases are allowed to remain, for by their conductivity they defeat the very object of the spark gap.

This latter method of producing the diathermy current differs from the former in that it produces oscillations of sufficient frequency which are well sustained, that is to say lasting a large part of the time between one stronger flow of the current at the electrodes and the next and that the voltage is relatively low and the ampérage high.

Having made it clear that the object of the diathermy current is simply to raise the temperature of the tissues to any degree and to any depth it will at once be apparent to the mind of any medical man that there is a very wide scope for its application and no doubt many conditions will at once occur to you which, theoretically at least, should be suitable for the application.

#### Effects of Diathermy.

Before discussing the various conditions which are suitable, it will not be out of place to say a few words about the special effects of diathermy.

There is no electrolytic effect in the ordinary polarization sense and the tolerance of the tissues to heat is the only limit to the strength of the current that may be used. In transverse penetration, that is to say where the two electrodes are placed directly opposite each other, the greatest rise of temperature occurs in the skin, less in the bone, muscle and fat and least in nerve. In longitudinal or parallel conduction, that is where the electrodes are placed more or less side by side, the exact opposite prevails. With bipolar electrodes three hundred or four hundred milliampères or more cause arterial hyperæmia of the skin with reflex stimulating effects, such as perspiration and a sense of heat. There is a sedative effect or itching and pain. The regular bipolar diathermy produces no motor or sensory effect except that of warmth. The skin, blood and bone are chiefly affected. A temperature of 40° C. may be safely used. A temperature of 80° C. coagulates albumin and separates the skin into two layers, a blister externally and a leathery layer beneath. Temperatures between

these two degrees may injure the tissues by precipitating globulin.

The secondary physiological effects of diathermy are due to increased cellular activity, brought about by the warmth which is applied to the intimate structure of the various organs. Diathermy through the heart with the active electrode over the sternum, given in therapeutic doses in healthy animals increases the pulse rate and temporarily raises the blood pressure without any effect on the respiration. If the current is passed transversely through the chest the opposite is the result, namely the respirations are accelerated, but no effect is noted on the circulation.

The local effect of diathermy is evidenced by an experiment of Nagelschmidt. An incision was made and the haemorrhage arrested by pressure. Diathermy was then applied from two electrodes at either side of but some distance away from the incision and the haemorrhage immediately began again and was profuse. Another of his experiments was carried out on a limb which had been rendered blue from Bier's hyperæmia. Diathermy applied to an area of this blue limb caused the part to become a bright arterial red.

The effect of diathermy currents on nerves is to produce a sense of warmth and to stimulate those which are distributed to glandular organs, thus increasing their secretion. It has already been shown that these currents have no power to stimulate motor nerves or muscular tissue. If a diathermy current is passed through the brain a sensation of compression is produced which passes off as soon as the current is discontinued.

Except for the gonococcus which is killed by a slight rise of temperature, diathermy currents do not appear to have any bactericidal action in living tissues. In fact, it would seem that the amount of heat which can be tolerated by the living tissues without actually damaging them acts rather as a stimulant to bacteria and promotes their growth.

The strength of current used bears a certain relation to the size of electrode used, to the diameter of the limb when the current must traverse its length and to the nature of the internal organs traversed.

The application of diathermy in all cases requires the attention of an expert every moment of the time and should not be entrusted to a lay attendant entirely or even to an untrained physician. Serious damage can be done and done so quickly that the constant supervision of the expert is required. I have no hesitation in saying that of all the various electrical means used in medical practice diathermy is the most dangerous in the hands of the untrained. This, of course, is no argument against the use of diathermy because these dangers can be avoided and the risks reduced to a minimum.

#### Conditions Suitable for Treatment by Diathermy.

Allow me now to call your attention to some of the conditions, medical and surgical, in which diathermy is most commonly used.

Many of the painful joint conditions are relieved by the heat which can be applied by diathermy, not only to the surface but to the internal parts of the joint. Where adhesions are of recent formation it is possible that the application of diathermy may assist in their absorption.

Patients with neuritis have been considerably benefited.

It has in recent times been used in cases of acute pneumonia with very satisfactory results, giving relief to the patient and hastening resolution of the consolidated lung. It has been applied to the heart in cases of angina with great benefit. According to Nagelschmidt after a course of diathermy treatment to the heart with the electrodes placed over the heart front and back the attacks are diminished greatly both in frequency and severity.

All these applications may be regarded as medical since the conditions mentioned would in themselves be considered medical.

The surgical conditions suitable for diathermy are almost too numerous to mention. One may say that wherever it is desirable to destroy new growth, whether it be simple or malignant in nature, diathermy is the ideal method, the only proviso being that it is accessible.

Malignant ulceration can be most successfully treated by diathermy which has many points to recommend it as the method of selection. It is thoroughly efficient and at the same time more conservative than excision.

Personally I have had a fair amount of experience in the diathermy treatment of villous growth of the bladder and I can speak with enthusiasm of the results. Some of these applications have been made through the cystoscope, whilst others have been effected through an open wound in the bladder wall after suprapubic cystotomy. In all these cases my work has been done in cooperation with the surgeon.

Another class of case that I have treated by means of diathermy is malignant growth of the tongue. Usually these cases have been pronounced inoperable before coming my way and the experience I have had leads me to regard diathermy as the method of selection in these cases. Of course where there is secondary glandular infection, the glands must be excised in the usual manner after the primary growth has been destroyed. In my opinion it is usually desirable to proceed as I have directed, namely deal first with the primary growth and at a subsequent date excise the glands.

I have recently had an interesting case of adenoma of the rectum which the pathologist reported as becoming malignant. The patient was sent to me by Dr. Giblin who considered the condition quite inoperable in the ordinary way. It certainly would have meant a most extensive and drastic operation as the whole of the lower part of the rectum was practically filled with the growth. The patient's condition was very bad as he was suffering from general septic poisoning. His condition and his advanced age were strong contraindications to a major surgical operation.

It was decided to try diathermy as a last resort. This was carried out successfully but with difficulty owing to the inaccessibility of part of the growth. The day following the operation the patient sat up in bed, smoked a cigarette and ate quite a respectable dinner. He showed absolutely no sign of shock, indeed his general condition was so much improved that doctors and nurses were astonished.

At a later date a further application had to be given as a small nodule of growth high up the rectum had escaped the treatment. I had a special glass speculum made for the purpose of getting at this nodule, with a fenestrated opening cut in one side. After this second operation the patient made the same satisfactory recovery.

It remains to be seen whether we have finally destroyed the growth in this case; only time can show us that. However, I am satisfied that in this which was thought to be a hopeless case from the start, we were fully justified in our treatment if only for the relief and comfort given. The result in this case has quite convinced me that where the growth is accessible diathermy should be the method of selection.

Malignant ulceration of the cervix is a condition admirably suited to diathermy even if it is thought advisable at a later date to do a hysterectomy. Personally my feeling is that unless glandular involvement has taken place hysterectomy is not necessary.

I have treated haemorrhoids by diathermy in numerous instances with the most satisfactory results. By this means there is no fear of haemorrhage or secondary haemorrhage, no loss of sphincter action and practically no pain afterwards. The time in hospital also is reduced in most cases to two or three days instead of two or three weeks which is a consideration of some importance to most patients.

Naevi and vascular caruncle may be treated with perfect success and the resulting scar is not as bad as might be expected.

Another condition which I have recently treated with this method, was a large papilloma growing from the external auditory canal which almost completely blocked the meatus. The final result in this instance was perfect, the resulting scar being almost imperceptible.

In conclusion may I point out some of the virtues of diathermy treatment in surgical cases. In the first place there is remarkably little scarring. Secondly there is no haemorrhage. Thirdly as the process is one of coagulation the blood vessels and lymphatics are sealed instantly and thus no fresh channels for infection are opened, a consideration which I venture to think is of the greatest importance when dealing with malignant conditions. Every operating surgeon has had the painful experience of seeing secondary deposits developing in the scar and this after every care has been taken to avoid it.

Lastly diathermy saves a great deal of suffering. The absence of pain after a diathermy operation is a feature which strikes every operator and on-

looker. The explanation of this I am not prepared to give, but the fact remains.

I think I have said sufficient to satisfy you that this method of treatment is worthy of consideration. I thank you for your patient hearing.

**REPORT ON THE EDUCATION AND TRAINING  
OF CRIPPLES IN THE UNITED STATES  
OF AMERICA.<sup>1</sup>**

By WILFRED VICKERS, D.S.O., M.B., Ch.M. (Sydney),  
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It is essential in dealing with the problem of the cripple to have a survey of all cripples in the State. This will need Government assistance. Such a review has been undertaken by many cities in Great Britain and America. Following are some of the findings in the survey of cripples in New York:

1. There are about thirty-six thousand cripples in New York City representing about 0.7% of the population.

2. Of all cripples about 50% are under sixteen years of age; about 63% become crippled before reaching the age of sixteen years.

3. Nearly one-half of the cripples discovered by the canvass was not being treated.

4. There are in New York City about sixteen hundred crippled children under fifteen years of age whose condition has not been diagnosed. In 67% of these the prognosis is good; in 10% the prognosis is fair; in 23% the prognosis is poor.

5. There are about six thousand five hundred cripples who have attended hospital, but who have now ceased to attend. In 10% of these the prognosis is good; in 51% the prognosis is fair; in 39% the prognosis is poor.

6. Of those over fifteen there are about seven thousand that fall within these two classes. In addition there are about six thousand three hundred suffering from rickets who would be benefited by treatment.

7. Of cripples between the ages of five and fifteen 21% are not attending school and only about 2% attend high school or special school.

8. Of cripples over fifteen years of age 28% are totally dependent, 13% partially self-supporting and 59% totally self-supporting.

9. Of all cripples under sixteen years of age 27% owed their condition to poliomyelitis, 40% owed their condition to rickets, 12% owed their condition to congenital conditions, 6% owed their condition to tuberculosis.

Such a survey would give us an idea how far our system of medical care and treatment is dealing with the problem of the cripple. We may be able

to do something for that large class of adult cripples who now spend months and years in our State hospitals.

If we could accept the percentage for the State of New South Wales the following would be the figures: We should have about fourteen thousand cripples; about seven thousand would be under sixteen years of age; about six thousand would not be treated; the condition of about six hundred would not be diagnosed; in four hundred of these the prognosis would be good; eight hundred between the ages of five and fifteen years would not be attending school; about two thousand over fifteen years would be totally dependent.

As we have fewer cases of rickets and joint tuberculosis it is likely that these percentages would all be lower. In this connexion I would like to mention the work done at the Brigham Hospital, in Boston. This institution is devoted to the treatment of chronic bone and joint disease. Each case is reviewed by a group of specialists and the condition is thoroughly considered. Much good work is being done. Occupational therapy is a special feature of this institution.

**Education of Children while still Patients in Hospital.**

I found that generally there was very close cooperation between the education department and the hospital. At the hospital there is usually a room completely equipped with desks, books and so forth. A teacher is detailed by the education department and is responsible for the instruction of all the children in the hospital. All those able to do so must attend in this room for two to three hours per day. Other children confined to bed are given exercises consistent with their disability. I was assured that in this way there was no interruption to the education of the children and that they advanced just as rapidly as the other children in the ordinary school. I was assured too that the school work did not interfere with the medical treatment or nursing.

Education of cripples after they leave hospital is dealt with in two ways: (i.) By the establishment of special cripple schools to which the children are conveyed each day in motor omnibuses; (ii.) by the establishment of hospital schools which are really boarding schools for crippled children.

The former method has the advantage that the children can remain at home with their parents and can be treated by their own medical practitioner, but there is a class whose home conditions are not suitable and for whom the establishment of hospital schools would be an advantage. These schools in addition to providing medical attention and primary education also offer other advantages in technical education. Many of these schools are established throughout America. One of the largest is the Massachusetts Hospital School at Canton, near Boston. This school has about three hundred pupils. The Principal is very strongly in favour of this type of school. He states:

The low admission age (nine and a half years) indicates that the general public is coming to realize

<sup>1</sup> Read at a meeting of the Section of Orthopaedics of the New South Wales Branch of the British Medical Association on December 4, 1924.

more and more the benefits which a crippled child may gain by associating with other children who are also handicapped, possibly to a greater degree than himself. A crippled child who is of necessity confined to his home and who finds himself unable to compete with normal children of his own age often has a tendency, which is only natural, to become discouraged, to exaggerate his disability and to regard it as something against which it is useless to contend; but the same child, liberated from the necessarily restricted environment of his home and placed in a community of boys and girls who are all handicapped to some extent, discovers possibilities in himself of which he has not been aware and as a result of these discoveries and of a growing spirit of self-confidence he comes to regard his own disability as little more than an inconvenience to be overcome. When this stage in the character foundation of the child has been reached and he has come to feel a growing, vital interest in his surroundings and to realize that he can play just as important a part as anyone else in the economic and social world, the matter of vocational training is a comparatively simple thing. With a growing tendency to train and educate the crippled child so that later on he will find a useful place for himself in the community we may feel that this problem of the adult cripple in the future will be greatly minimized.

A careful inventory of each child's assets and liabilities both mental and physical must be taken. A crippled child is not likely to be strong or self-reliant if he lives at home where anxious parents anticipate his every wish, precluding all necessity for effort on his part. Place him in a school for cripples where he sees many other children who in spite of their disabilities are happily engaged in tasks and sports, and life suddenly holds out to him wonderful and alluring possibilities. He partially forgets his own trouble in watching the achievements of his mates and feels a mighty desire to "go and do likewise."

#### The Principal adds:

In addition to the regular grade work our pupils have an exceptional opportunity for vocational training. Not from dry textbooks are the subjects taught, but the child voluntarily working side by side with the wage earner thus gains more practical knowledge than could be obtained in any other way. . . . Mere book learning is of small importance compared with the necessity of developing in the child a moral fibre that will withstand the world's buffets and scorns and enable him to win the battle of life in spite of, even possibly because of, handicaps.

The children in this school are allowed to attach themselves to the gardener, poultryman, engineer, carpenter, tailor, painter, chauffeur, dairyman, boot-maker, stenographer *et cetera* and to work with him for about two hours a day. Three hours daily are spent in school work. They have organized games, teams that compete with other boys in sports *et cetera*. Later on special opportunities are given for more complete training and technical education. The cost per head is about forty-five shillings per week of which the children contribute about fifteen shillings. The medical work at all these hospital schools is supervised by an orthopaedic surgeon.

Chicago has a well organized system of cripple schools. The city is divided into five centres and each has its school. The omnibuses have wide aisles

that can accommodate a child reclining in a wheel chair and over eight hundred children are transported each day by motor omnibuses to school. The cost of each child's education is £80 per annum of which the omnibus service costs about £45.

Their three aims are: (i.) Physical rehabilitation, (ii.) academic classes, (iii.) vocational training or industrial work.

Two quotations from the school report are worth making: "The education of the crippled child is not philanthropy—it is enlightened self-interest.

Every cripple is a potential tax-consumer; properly trained physically, morally and mentally every child of normal intelligence can be a tax producer." I wish to make the following recommendations:

(i.) That a complete survey of the cripples of the State should be made, including the patients in hospital suffering from chronic bone and joint diseases.

(ii.) That if a sufficient number of children are found who are not receiving education by reason of the fact that their disability prevents them from reaching school, one of the following methods of dealing with the problem be suggested:

(a) By the establishment of special cripple schools or special classes in existing schools to which the children could be transported each day by motor omnibus.

(b) By the establishment of hospital schools where the children could be kept in residence and given training suitable to their disability. These institutions would relieve the hospital beds very considerably.

(c) By the provision of opportunity for technical education.

(iii.) That the Education Department be approached with a view to having a teacher detailed for duty with each hospital where there are a sufficient number of children of school age remaining as patients for more than a few months and that complete arrangements be made by the hospital authorities for the uninterrupted teaching of these children.

(iv.) That a follow-up system is essential in all hospitals with a periodical review of all cases. In this connexion the services of the District Nursing Association could be utilized to keep in touch with those patients that could not attend hospital.

A report issued by the Pensions Department of the Commonwealth shows that there are 17,514 persons drawing invalid pensions in the State of New South Wales, costing this State £780,000. More than one-fifth, about four thousand, are admitted before the age of thirty years. About one-third of these, about thirteen hundred, is included under the headings of infantile paralysis, tuberculosis of bones and joints, hemiplegia, accident and diseases of the circulatory system. These are mostly the cripples for whom much could be done by education, as most of them become cripples before they reach the age of ten years.

VACCINE TREATMENT OF PERTUSSIS.<sup>1</sup>

By ROBERT SOUTHBY, M.D., B.S. (Melb.),  
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THE variety of methods in the treatment of pertussis advocated by different authorities from time to time and attended with varying results would appear to indicate how little we know and how helpless we are in dealing with this widespread annual epidemic disease, accompanied as it is by such serious immediate complications and very grave sequelæ.

In the hope of finding something that will relieve such a distressing condition in children, one cheerfully tries any of the new preparations constantly being recommended, but, unfortunately, no line of treatment up to the present time seems to have any really specific effect, certainly nothing comparable to the actions of the antitoxins for diphtheria and tetanus.

Having been very little impressed by the use of the various antispasmodics such as benzyl benzoate, adrenalin, garlic and intramuscular injections of ether, I decided to treat a series of patients with vaccine alone and to compare the results with a similar series in the same epidemic treated without vaccine.

The vaccine was a mixed one, prepared by Dr. Reginald Webster from a number of patients during the early stage of the disease and contained in each cubic centimetre one thousand million Bordet bacilli, five hundred million pneumococci, two hundred and fifty million *Micrococcus catarrhalis*.

Until this time the vaccine had only been used in an indifferent and spasmodic manner at this hospital, small doses being given at irregular intervals and no analysis made of the results obtained. In this collection of cases we gave a series of four injections spread over a period of two weeks, commencing with a dose of two hundred and fifty millions and increased to five hundred, seven hundred and fifty and one thousand millions respectively. These figures refer to the quantity of Bordet bacillus present in the dose.

In order to have reliable controls the vaccine was administered to alternate patients, thus giving two groups, one vaccine treated and the other consisting of those who received no vaccine. These groups were made up of patients of approximately similar ages, duration of illness and severity of the paroxysms. They were consequently suitable for comparison of the two different methods of treatment.

The series consists of a number of patients with pertussis treated in the out-patient department at the Children's Hospital during the late winter and spring of 1922.

In endeavouring to place the correct value of the efficacy of vaccine treatment one has to consider the following factors: (i.) age of the patient, (ii.) duration of the illness before commencing treat-

ment, (iii.) effect of treatment on the frequency and severity of the paroxysms, (iv.) effect on the total duration of the illness.

The only reliable criteria of progress are diminution of the frequency and of the severity of the attacks and to obtain a record of these it is necessary for the mother to record on a chart the time of occurrence and the duration of each individual spasm; this was found to be one of the most difficult parts of the investigation. Almost invariably the parents were very keen to assist for the first few days and would carefully tabulate the time of occurrence of each paroxysm together with its duration and whether or not it was accompanied by vomiting or cyanosis. However, after the first few days their enthusiasm waned and they would arrive with some excuse for having no further records. In these cases one had then to rely on the statements of the mother as to whether the child was definitely improved, no better or becoming worse under the treatment.

Further, it was necessary to be certain that the condition from which every child suffered, was true pertussis as it is often extremely difficult to diagnose with certainty during the first seven to ten days. To insure this being the case no patient has been included in the series who did not present a paroxysmal cough, consisting of a number of sudden, short expiratory efforts, associated with vomiting during or at the end of the attack. When cyanosis occurs or a definite "whoop" is present there is, of course, no doubt as to the diagnosis.

While it is scarcely necessary to discuss the question of diagnosis, I should like to emphasize the importance of the paroxysmal cough associated with vomiting, particularly in infants. It is the exception for these little patients to have a distinct "whoop." Often there is a relaxation of the sphincters during the severe attacks.

The paroxysms can usually be started by irritating the posterior pharyngeal wall with a throat spatula during the routine examination or, if this fails, a spasm may be precipitated by giving the child a drink. These symptoms together with signs of an extensive bronchitis or early broncho-pneumonia—rhonchi and râles or crepitations scattered diffusely through both lungs particularly on the posterior aspect—are pathognomonic of pertussis.

Many small babies with a simple broncho-pneumonia often have a persistent irritating cough, but it does not occur in paroxysms with intervening periods of relative comfort which are observed in true pertussis.

Finally, during the most distressing paroxysms the babies are often noticed to plunge one hand down the throat and endeavour to remove the large collection of mucus which is brought into the posterior part of the pharynx, but owing to its extreme tenacity cannot be properly expectorated. Their struggles are often attended with great success and much subsequent comfort. Young babies often die quite suddenly during the severe paroxysms.

I have purposely dilated on these few points in the diagnosis of pertussis in babies in view of the

<sup>1</sup> Read at a meeting of the Melbourne Paediatric Society on November 11, 1924.

fact that such patients are often promised admission to hospital as though they were suffering from simple broncho-pneumonia, because the practitioner quite unintentionally declares that they are not suffering from pertussis because they have never "whooped."

One of the most worrying factors in dealing with these children is the loss of general condition as a result of the actual starvation from the persistent vomiting; in this respect the parents must be made to understand that the child should be given ample food to make up for what is lost with each attack of vomiting.

In not a single instance was there any ill effect following inoculation with the vaccine; this applied even with the small babies.

#### Summary of Clinical Histories.

The following summarized case histories show the decided improvement in some of the patients who responded to vaccine treatment:

**CASE IX.**—The patient was a female, aged ten years and nine months. On September 19, 1922, there was a history of paroxysmal cough much worse at night and associated with vomiting. These symptoms lasted for fourteen days. The patient had been whooping during the preceding four days. A vaccine of two hundred and fifty million organisms was given.

On September 23, 1922, the child was improving, it was still coughing very often during the day and four or five times at night. A vaccine containing five hundred million organisms was given.

On September 27, 1922, the child was still improving; it coughed during the day and only twice or three times at night. Vaccine containing seven hundred and fifty million organisms was given.

On October 2, 1922, the patient was very much better and was only coughing twice during the day and once at night. Vaccine containing one thousand million organisms was given.

On November 23, 1922, the child was very well and had had no cough since the previous injection of vaccine. On April 5, 1924, the child was quite well and had not suffered from any sequelæ.

**CASE XI.**—The patient was a female, aged one year and four months. On September 20, 1922, a history of cough with vomiting and a definite whoop of six days' duration was obtained. Vaccine containing two hundred and fifty million organisms was given.

On September 25, 1922, the patient was still coughing and vomiting, but not whooping. Vaccine containing five hundred million organisms was given.

On September 30, 1922, the patient was much better and was not vomiting or whooping. Vaccine containing seven hundred and fifty million organisms was given.

On October 5, 1922, the patient was very well and had only a slight cough. Vaccine containing one thousand million organisms was given.

On November 10, 1923, the patient was very well and did not suffer from any sequelæ.

**CASE XXIX.**—The patient was a female, aged one year and eight months. On October 12, 1922, a history of paroxysmal cough and whoop of seven days' duration was obtained. Vaccine containing two hundred and fifty organisms was given.

On October 16, 1922, the patient was greatly improved. Vaccine containing five hundred million organisms was given.

On October 19, 1922, the patient was much better; the spasms were shorter and less frequent. Vaccine containing seven hundred and fifty million organisms was given.

On October 23, 1922, the patient suffered from only an occasional cough. Vaccine containing one thousand million organisms was given.

On January 15, 1923, the patient was quite well and did not suffer from any sequelæ.

**CASE LXXXIX.**—The patient was a female, aged eight years and ten months. On October 13, 1922, a history of paroxysmal cough with vomiting and whooping of ten days' duration was obtained. Vaccine containing twenty-five million organisms was given. The number of paroxysms occurring during the day and night was recorded. From October 13 to October 17 the number of paroxysms for each successive day was thirty-seven, fifty-six, forty-one, sixty and twenty-five. Ten paroxysms occurred each day during the day time. The remainder occurred at night. On October 17, 1922, the patient was coughing blood. Vaccine containing five hundred million organisms was given. On October 18, 19 and 20 the paroxysms numbered respectively thirty-three, twenty-nine and twenty-five. Ten occurred each day during the day time and the remainder at night.

On October 20, 1922, the patient was improving. Vaccine containing seven hundred and fifty million organisms was given. From October 21 to 24 the daily paroxysms numbered ten, seven, five and three. Of these four, three and one occurred during the day time. The remainder occurred at night. On October 24, 1922, the vaccine containing one thousand million organisms was given.

On November 10, 1922, the patient was quite well and had been so since the last injection.

On March 2, 1923, the patient was well and did not suffer from any sequelæ.

**CASE XCI.**—The patient was a male, aged three months. On October 16, 1922, a history of paroxysmal cough of vomiting and whooping of nine days' duration was obtained. Vaccine containing two hundred and fifty million organisms was given. On October 20, 1922, the patient was coughing about every hour. Vaccine containing five hundred million organisms was given.

On October 23, 1922, the patient had improved considerably. Vaccine containing seven hundred and fifty million organisms was given. On December 1, 1922, the patient was quite well and did not suffer from any complications.

**CASE XCIV.**—The patient was a female, aged two years and five months. On October 3, 1922, a history of paroxysmal cough, vomiting and whooping of ten days' duration was obtained. Vaccine containing two hundred and fifty million organisms was given.

On October 7, 1922, the patient was definitely better. Vaccine containing five hundred million organisms was given.

On October 10, 1922, the cough had practically disappeared, no whoop was present. Vaccine containing seven hundred and fifty million organisms was given.

On October 14, 1922, the patient was quite well. Vaccine containing one thousand million organisms was given.

On August 31, 1923, the patient was very well and had not suffered from any sequelæ.

**CASE XCVIII.**—The patient was a female, aged one month. On October 3, 1922, a history of paroxysmal cough and vomiting for two weeks was obtained. Vaccine containing two hundred and fifty million organisms was given.

On October 7, 1922, the patient was better. Vaccine containing five hundred million organisms was given.

On October 10, 1922, paroxysms were much less frequent. Vaccine containing seven hundred and fifty million organisms was given.

On October 14, 1922, the patient was very much better and complained of occasional cough only. Vaccine containing one thousand million organisms was given.

**CASE CV.**—The patient was a female, aged nine months. On October 26, 1922, a history of paroxysmal cough, vomiting and whooping of two weeks' duration was obtained. Vaccine containing two hundred and fifty million organisms was given.

TABLE I.

Method of Treatment.	Under Two Years.	Over Two Years.	Total.
Vaccine ..	34	40	74
No vaccine ..	17	21	38

On November 2, 1922, the patient was very much better. Vaccine containing seven hundred and fifty million organisms was given.

On November 5, 1922, the patient was quite well. Vaccine containing one thousand million organisms was given.

On August 21, 1923, the patient was very well and had not suffered from any sequelæ.

CASE CVI.—The patient was a male, aged nine months, and a twin brother to the patient described as one hundred and five. On October 26, 1922, a history of paroxysmal cough, vomiting and whooping of two weeks' duration was obtained. Vaccine containing two hundred and fifty million organisms was given.

On October 30, 1922, the patient was very distressed and became cyanosed, frequent epistaxis occurred. Vaccine containing five hundred million organisms was given.

On November 2, 1922, the paroxysms were much less frequent and not so severe. Vaccine containing seven hundred and fifty million organisms was given.

On November 5, 1922, the patient was very much better. Vaccine containing one thousand million organisms was given.

On August 21, 1923, the patient was very well and had not suffered from any sequelæ.

#### Analysis of Results.

The series comprises one hundred and twelve children of whom seventy-four were treated with vaccine, while the remaining thirty-eight did not receive vaccine. Since the illness is notoriously much more serious in babies than in older children, the cases were further subdivided into two groups according to the age of patients under or over two years (see Table I.).

In attempting to assess the value of treatment, I have divided the patients into two classes, firstly those who definitely improved under treatment (that is those who showed a definite diminution in the frequency and severity of the paroxysms) and, secondly, those who showed no improvement (see Table II.).

From this analysis it appears that of the patients treated with vaccine there was definitely a greater proportion improved than in the group which had no vaccine. This applies for both age periods.

Further, I have endeavoured to estimate whether the vaccine has been at all effective in shortening the course of the disease in addition to lessening the frequency and severity of the spasms. In this respect only the patients who were definitely improved under treatment have been considered, all those who manifested no amelioration having been discarded when determining the average duration of the illness. In this way, a fair comparison is obtained between vaccine and non-vaccine treated cases (see Table III.).

From this it is evident that the course of illness was slightly shortened by the use of vaccine in the babies, but in the other children there was practically no difference between the two groups.

One patient of rather more than ordinary interest was encountered on examining the case records, namely a child who has had pertussis three times. In view of the great rarity of recurrence of the disease, I may be permitted to quote the notes in detail:

In February, 1921, W.H., a male, aged seven months, attended hospital with the history of a paroxysmal cough, associated with vomiting for the previous two weeks during the latter part of which he also began to "whoop."

TABLE II.

Result of Treatment.	Under Two Years.		Over Two Years.	
	Treated with Vaccine.	Treated without Vaccine.	Treated with Vaccine.	Treated without Vaccine.
Definitely improved .. .. ..	28 (or 82%)	11 (or 65%)	35 (or 87%)	12 (or 57%)
Not improved .. .. ..	6 (or 18%)	6 (or 35%)	5 (or 13%)	9 (or 43%)
Total .. .. .. ..	34	17	40	21

TABLE III.

Period.	Under Two Years.		Over Two Years.	
	Treated with Vaccine.	Not Treated with Vaccine.	Treated with Vaccine.	Not Treated with Vaccine.
Period before treatment .. ..	10 days	13 days	13 days	13 days
Period of treatment .. ..	14 days	21 days	15 days	18 days
Total duration of disease .. ..	24 days	34 days	28 days	31 days

Periods are average periods for patients who improved under treatment.

He was given three doses of vaccine (fifty, one hundred and one hundred and fifty million organisms respectively) at weekly intervals, after which he was greatly improved and five weeks after the onset was apparently quite well.

Exactly twelve months later, in February 1922, at the age of one year and seven months, he again attended with the history of a paroxysmal cough associated with vomiting of two weeks' duration. He was given a similar course of vaccine (that is injections of fifty, one hundred and one hundred and fifty millions) at intervals of four days and in five weeks was again completely cured.

Finally, in May, 1924, at the age of three years and ten months, he again attended with the complaint of paroxysmal cough, vomiting and whooping of ten days' duration. This time he was given four injections of vaccine (two hundred and fifty, five hundred, one thousand and one thousand five hundred millions) at intervals of four days and was greatly improved and has remained well after the last injection.

#### Summary.

As a result of the investigations, I think we may conclude that:

1. Vaccine treatment definitely improves the condition of the patient in that the paroxysms are lessened in frequency and severity.

2. Vaccine treatment has very little effect on the total duration of the disease, except in young babies when it is slightly shortened.

3. The vaccine should be given in large doses and as early as possible to obtain the optimum effect.

#### Acknowledgements.

Before concluding I wish to express my thanks to the members of the out-patient honorary medical staff for permission to use the case histories of patients under their care and to publish the results of these investigations. I am also greatly indebted to Dr. F. J. Bain Drake who was a member of the resident medical staff at the time, for his valuable assistance in supervising the treatment and collecting the records of many of these patients.

## Reviews.

### DISEASES OF CHILDREN.

In the third edition of Dr. Kerley's well known book "The Practice of Pediatrics," he has been assisted by Dr. Graves who now appears as coauthor.<sup>1</sup> That its value is fully appreciated in America is evident from the fact that it has reached its third edition in ten years, besides having been reprinted several times. There is a considerable amount of new material, bringing the work well up to date. A number of the older articles and illustrations have been omitted as no longer essential.

The preliminary chapters on feeding and management are good. The authors hold the view that the young mother of today is better able to suckle her infant than was the mother of fifteen or twenty years ago. This is explained by the fact that growing girls and young women are leading more hygienic lives than formerly. In writing of artificial feeding, the adaptation of cow's milk to the needs of the infant are fully discussed. There is a short chapter on mortality and morbidity and the fact that nearly half the deaths occurring in infancy take place in the first month of life, is emphasized. In view of the

large and so far stationary infant death rate in the early days of life, the care and feeding of the premature infant might well have been more fully considered. The prevention of the acute intestinal diseases is dealt with shortly. Reference is made to an interesting demonstration made under the direction of Dr. W. H. Park, of the New York Health Department, of what may be accomplished by proper care during the summer season. Fifty tenement children, from three to nine months old were selected for the experiment. The mothers of these children were carefully instructed in the care of the milk and the details of caring for their babies. They were visited two or three times a week by a medical practitioner. Amongst these fifty tenement infants, all bottle-fed, selected at random, there was not one death during the summer. The authors emphasize the necessity for education of the mothers in this respect. A better conception of rheumatism as it occurs in childhood would be given, if the various manifestations of this disease were considered together, instead of in different sections of the book. As is usual in textbooks on pediatrics, diabetes is very shortly considered. No guidance is given to the reader in methods of dealing with the special difficulties which arise in managing the diet of diabetic children.

The chapter on special diagnostic methods is good. The authors are of opinion that the intradermal tuberculin test is at least twice as accurate as the von Pirquet. It has the single disadvantage that the dilute solution must be prepared.

On the whole, the authors must be congratulated on producing a sound, reliable exposition of the practice of pediatrics which should prove useful to British as well as American practitioners.

### A PRÉCIS OF OPHTHALMOLOGY.

POCKET textbooks are not popular for several reasons. They are irksome things to read; by their brevity they evade criticism and their tabloid form creates a feeling of inadequacy and mental dyspepsia. Still it would be foolish to deny merit to Dr. Ballantyne's "Pocket Book of Ophthalmology" and one might even conceive it to be of considerable service especially to students with its convenient blank pages in which to supplement the text. As to the subject matter, the author's name and reputation are sufficient guarantee of its reliability and excellence. The risk of a bald statement is shown by a sentence in a short account of myopia. The author says: "Divergent squint is a frequent complication." This certainly has not been our experience. Surely it is hardly worth while to burden the student's memory with such useless and unknown terms as madarosis and tylosis.

We note the omission of the use of Buller's shield in gonorrhoeal conjunctivitis and also of the typical central colour scotoma of tobacco amblyopia. We might also mention that miosis is generally spelt with an "i" and not "y" and that pinguicula is not confined to old people. With the exception of these perhaps trivial objections the work can safely be recommended to those who like a book of this kind.

### AUSTRALIAN HISTORY.

JOSEPH BRYANT'S book "Great Events in Australian History" should prove a useful companion for young students engaged in studying Australian history.<sup>2</sup> The main features of exploration, politics and literature are considered and clearly told, though it must be confessed that the narrative is at times tedious. The book is well illustrated by Mr. Percy Lindsay and contains a useful chronological table and an index.

<sup>1</sup> "The Practice of Pediatrics," by Charles Gilmore Kerley and Gaylord Willis Graves; Third Edition; 1924. Philadelphia and London: W. B. Saunders Company. Royal 8vo., pp. 922, with 150 illustrations. Price: \$9.00 net.

<sup>2</sup> "Great Events in Australian History," by Joseph Bryant; 1925. Sydney: Cornstalk Publishing Company, Angus & Robertson, Limited. Crown 8vo., pp. 178, with illustrations.

## The Medical Journal of Australia

SATURDAY, JULY 4, 1925.

### The Abuse of Patent Medicines.

THE Public Health Committee of the League of Nations was in session in April of this year and adopted no less than twenty-eight resolutions on the recommendation of its technical advisory committee. Among these resolutions was one to the effect that a report should be prepared for the next session dealing with the abuses arising from the employment of patent medicines. The subject is one that has been handled in some form or another by the medical press and by the medical profession during the past quarter of a century. That patent medicines and proprietary remedies are frequently abused and that many do much harm to the community, is generally admitted. There is an enormous mass of evidence to prove it. The patent medicine vendor often trades on the habit of the lay person of diagnosing diseases by obvious symptoms. A pain in the back is thought to indicate disease of the kidney and the patent medicine man perpetuates the falsehood and vaunts his nostrums with an impudent assurance that they cure all renal affections. The manufacturer of so-called nerve foods tempts the public to interpret all forms of debility, no matter what their cause, as the results of nervous exhaustion. The harm done by the indiscriminate swallowing of many of these inert phosphorus preparations depends on the delay in having the affection from which the patient is suffering, correctly diagnosed and suitably treated. Not a few patent medicines are sold for their alleged abortifacient action, although the majority are not possessed of such an action. The public understands the veiled inference of the advertisements. Then there is a large group of patent medicines offered as certain remedies for incurable ailments, a cruel and iniquitous swindle. There are many patent medicines compounded with some care and with the

employment of pure drugs. The objections to some of these is their exorbitant price. Others are made of drugs of indifferent quality with impurities covered by what may be termed chemical tricks. The abuse in these instances arises in two ways. These preparations are at times very widely advertised and the public is induced to indulge in self-medication to its grave detriment. The second objection is that when the drug in question should be used, the person gets an impure preparation of diminished therapeutic activity.

There can be no doubt concerning the harmful effect of the advertisement and sale of very many patent medicines. But it is by no means easy to suggest a remedy. It is both inadvisable and impossible to forbid the sale of all proprietary remedies. In the first place many preparations of great value are patented. We need but to mention "Insulin," "Heroin," "Omnopon," "Antiphlogistine," "Hormotone," to make it abundantly clear that certain proprietary preparations are indispensable to the medical profession. Others have been tested for many years as household remedies and have fulfilled their functions admirably. These are largely aperient medicines. Even if it has been shown that their price is high, the public obtains a reliable, constant and well dispensed preparation and is willing to pay for it. Lastly there are numerous proprietary mixtures, not secret remedies, whose therapeutic action depends on happy combinations of drugs, the employment of first class ingredients and skilful pharmaceutical preparation. The medical profession would be unwise to refuse some of the proprietary medicines of this kind sold by Parke, Davis and Company and other well known firms of manufacturing chemists.

THE MEDICAL JOURNAL OF AUSTRALIA is endeavouring to distinguish the good from the bad, the wheat from the chaff. By investigating the process of manufacture of proprietary preparations, by analysing the ingredients and examining the therapeutic action, it is able to advise the medical profession in regard to the value of many of these remedies. It is true that these investigations are costly and cannot be undertaken on a wholesale scale. It is hoped, however, that the list of exam-

ined preparations will gradually increase until it becomes comprehensive. The advertisements of those that are found to be unsatisfactory, are not accepted by this journal. It would be of great value to the public if all advertisements of patent medicines were prohibited unless the proprietors or manufacturers disclosed the active ingredients either on the label or in some other manner and submitted evidence of the therapeutic action claimed. The evidence would have to be from some independent source and to be submitted to a non-interested authority competent to form a reliable opinion on matters appertaining to pharmacology. It would be advantageous if advertisements of patent medicines in the lay press were limited to aperient drugs, harmless cough mixtures, corn solvents, tooth powders and pastes and mouth washes. We realize that the daily newspapers would lose a large revenue by such a prohibition and in view of this vested interest we are not sanguine that such a healthy reform will be introduced. It is deplorable that the newspapers are willing to make a profit at the expense of the public weal. Sooner or later the public will learn how much harm is done by the nostrum traffic and then the vendor will discover that honesty is the best policy.

### Current Comment.

#### INCREASED INTRACRANIAL PRESSURE IN CEREBRAL TUMOUR.

THE three cardinal symptoms of cerebral tumour, headache, vomiting and papilloedema are recognized as being due to increased intracranial pressure. Increased intracranial pressure is as a rule dependent on changes in the total blood supply to the brain. It may thus be brought about by conditions in other parts of the body. The brain itself is incompressible and is encased in a hard, bony cavity which is unyielding to variations of pressure from within. It will be evident that the pressure of the cerebro-spinal fluid which circulates freely over the surface of the brain, is identical with the intracranial pressure. The intracranial pressure varies directly with the venous pressure within the skull and it passively follows changes in pressure in the arteries of the systemic circulation. At the same time the vasomotor mechanism of the cerebral circulation plays a part in the variations of pressure which may occur.

With a new growth of the cerebral cortex, for example, increased pressure is occasioned by increase in the solid contents of the cranium. An exception to this statement must be made in regard to neoplasms which cause destruction or absorption of brain tissue proportionate to their growth. The new growth by its size or by its extension into the surrounding tissues may be the indirect cause of increased pressure owing to the production of cerebral oedema or the blockage of cerebro-spinal fluid. It is a matter of common experience that cerebral tumours are not invariably accompanied by the threefold combination of symptoms, headache, vomiting and papilloedema. One may be present without the others. Vomiting and headache may last for a variable length of time and either of them may be intermittent. Owing to these facts difficulty is sometimes experienced in determining the exact significance of these manifestations.

A useful study of increased intracranial pressure in sixty cases of cerebral tumour has recently been made by Dr. W. Russell Brain.<sup>1</sup> Dr. Brain uses the term cerebral tumour to include besides neoplasms certain localized conditions which give rise to increased intracranial pressure. He has divided his cases into two groups, "verified" and "unverified." The former includes twenty-four cases in which the precise situation and extent of the tumour was ascertained at autopsy and fourteen in which the site of the tumour was verified during operation. The unverified group included twenty-two cases in which there was no autopsy and in which operation, if performed, gave no reliable information as to the site of the tumour. Throughout his study when the situation of the tumour has had to be taken into consideration, conclusions have been drawn from cases of the verified group only. In view of the relationship between blood pressure and intracranial pressure Dr. Brain records the blood pressure in a number of instances. In twenty verified cases the average systolic pressure prior to operation was 115 millimetres of mercury and the average diastolic pressure 75 millimetres. In thirteen supratentorial tumours the systolic averaged 119 millimetres of mercury and the diastolic 76.3 millimetres; in seven subtentorial tumours the average systolic blood pressure was 110 and the diastolic 74 millimetres of mercury. Dr. Brain points out that the low level of the figures is in striking contrast to the high blood pressures recorded during the intracranial injection of fluids and in cases of cerebral haemorrhage. The rise of blood pressure in these circumstances has been interpreted as the response of the vaso-motor centre to a progressive anaemia of the medulla. Dr. Brain points out that the rise in intracranial pressure resulting from a cerebral tumour is gradual and to a considerable extent localized by the *falx cerebri* and *tentorium cerebelli* to one compartment of the cranium. He refers to the findings of Tsubura that slight rises in intracranial pressure induced by the injection of

<sup>1</sup> *Brain*, March, 1925.

fluids cause a fall in blood pressure owing to stimulation of the cardio-inhibitory centre and he thinks that the bradycardia which is found in some cases of cerebral tumour, suggests that the low blood pressure may in these instances be due to the same cause. Tsubura also found that the intracranial injection of fluids did not lead to a rise in blood pressure, if the medullary centre had previously been destroyed by means of emboli. Dr. Brain states that the subnormal blood pressures found in cases of subtentorial tumour, especially tumours of the pons, may perhaps be due to the effect on the medullary centres of the local increase of pressure. The resulting medullary oedema and anaemia, though progressive, may be so gradual in their development as to lead to a depression of the vasoconstrictor centre without previously stimulating it.

Headache occurs more often in cases of cerebral tumour than vomiting or papilloedema. In Dr. Brain's sixty patients headache was present in all but seven. In the great majority the headache was paroxysmal, the duration most commonly being one hour. Continuous headache was apparently of grave prognosis. Attacks generally occurred when the patient awakened early in the morning or during the night; this was found in twenty among thirty instances in which the point was investigated. The stage of the disease at which headache began, was determined in cases of the verified group in relation to the site of the tumour. Headache was late or absent in six out of sixteen instances of tumour involving the frontal or parietal lobes and in one instance each of pontine and cerebellar tumour. It was early in all cases of tumour of the temporal lobe and ventricles and in the remainder of those in which the pons and cerebellum were involved. It has been proved that the brain itself and the leptomeninges are insensitive to pain and Dr. Brain regards it as likely that the headache is due to the abnormal tension of the *dura mater* caused by pressure of the tumour and possibly to pressure upon the bones of the skull. A large tumour may exert a constant pressure above the normal upon the *dura mater* and yet the headache may be paroxysmal. Dr. Brain points out that the circumstances which induce the headache, suggest an explanation of its paroxysmal character. Exertion causes a rise in arterial blood pressure and it has been stated by various authorities that the systolic blood pressure falls during sleep from fifteen to thirty millimetres of mercury in normal persons and that it rises again during the later part of the night and on waking.

Vomiting was present in thirty-nine of the sixty cases. Like headache, it occurred most usually in the early morning or during the night. The frequency of the vomiting increased as the disease advanced. The vomiting associated with cerebral tumour is generally held to be unaccompanied by any warning or by nausea. Of twenty-two patients whose vomiting was investigated in this regard, eight had no warning, four had slight warning, while ten complained of severe nausea or retching. Vomiting was investigated in relation to the site

of the tumour. It was absent in six out of nine cases of frontal tumour, in three out of eight tumours involving the parietal lobe and in two out of five involving the temporal lobe. Only two out of twelve patients with subtentorial tumours were free from vomiting. As a result of these observations Dr. Brain discusses the aetiology of vomiting of this type. His first hypothesis was that it might be due to pressure on the vomiting centre in the medulla. This view was rejected when it was found that vomiting was absent in a case of pontine tumour, that it occurred on only one occasion in another, that it was an early symptom of all five patients with cerebellar tumours and in five cases of tumour of the frontal and parietal lobes. The view that vomiting could be attributed to irritation by pressure of the afferent fibres of the vagus was rejected, because a patient who had bilateral tumours of the eighth nerve with direct compression of the left vagus nerve, did not vomit. It is extremely interesting, however, to know that a relationship was found to exist between hydrocephalus and vomiting. In no case was vomiting present in the absence of hydrocephalus. Dr. Brain concludes that hydrocephalus alone is sufficient to cause vomiting and that the degree of hydrocephalus found at autopsy is roughly proportional to the length of time that has elapsed since the onset of vomiting. He regards vomiting in cases of cerebral tumour as a reflex act of which the appropriate stimulus is a rise in intraventricular tension. He does not state whether hydrocephalus was found to any extent at autopsy in cases in which vomiting had not occurred. If the relationship between hydrocephalus and vomiting in cases of cerebral tumour is one of cause and effect, some other factor must be necessary. Otherwise it is difficult to explain the absence of vomiting in chronic hydrocephalus.

Papilloedema was present in forty-five of the sixty cases of the series. Primary optic atrophy was present in two patients with pituitary tumour and in thirteen the fundi were normal. Dr. Brain holds that papilloedema may arise in either of two ways. The raised pressure in the sheaths of the optic nerves may be due to the comparatively localized rise in intracranial pressure in the neighbourhood of the tumour itself. On the other hand the rise of pressure causing the papilloedema may be the result of internal hydrocephalus caused by a tumour remote from the optic nerves. In his opinion this dual mode of origin explains anomalies hitherto unrecognized in connexion with this symptom. In regard to the question of hydrocephalus the findings in one instance are of importance. At autopsy in this case a large fibro-neuroma of the eighth nerve was found. Among other associated lesions was a carcinomatous condition of the choroid plexuses of the lateral and third ventricles. Owing to this there was not a secretion of cerebro-spinal fluid sufficient to cause internal hydrocephalus in spite of obstruction to the aqueduct of Sylvius. The patient suffered from neither vomiting nor papilloedema.

## Abstracts from Current Medical Literature.

### DERMATOLOGY.

#### Pre-Cancerous Dermatoses.

TOKIASO FUKAMACHI (*Archives of Dermatology and Syphilology*, December, 1924) states that pre-cancerous dermatosis is a term serving to call attention to the group of cutaneous affections which includes Paget's disease of the nipple, *zederma pigmentosum*, *keratosis senilis*, arsenical keratosis and so forth. In all of these carcinoma results much more frequently than in the skin affections. Great effort has been made to determine the aetiological factors of cancer. A careful review of the literature, however, has shown that none of the theories advanced has explained all the facts. Thiersch's theory of a destruction of balance of tissues recently lost its standard advocate. Ribbert modified this theory by combining it with Cohnheim's blastoderm theory, but neither Ribbert's nor Cohnheim's theory can account for many tumours in which atypical proliferation is associated with clinical manifestations of malignant disease. There are many other theories, such as Hansemann's anaplasia of the epithelial cells, Hauser's new cell race, Beneke's cataplasia, Hertwig's return of cells from the organo-typical to the zyto-typical growth and Ehrlich's specific nutritive element. Recently the parasitic theory seems to be supported less vigorously. In short, internal aetiological factors of cancer, such as age, heredity, embryonic rest, metabolic disturbance and connective tissue changes, are less emphasized in the aetiology of carcinoma of the skin on account of the greater rôle played by various forms of chronic irritation which are external factors. Although it is difficult to be sure that these are important and definite and that they have any specific action, they seem to determine the site of the carcinoma. Therefore, until more is known of the internal physiology and chemistry of the epithelial cell, it must be admitted that these functions may be subject to malignant change through these external factors alone and that there are various degrees of changes in this direction.

#### Keloids.

H. H. HAZEN writes on the treatment of keloids by Röntgen radiation (*American Journal of Roentgenology*, June, 1924). All keloids result from injury to the skin and vary much in size and thickness and may have a cartilaginous hardness. Any method of surgical treatment is usually followed by a larger keloid than the one removed. Large keloids should be surgically removed and the operation area then irradiated. The author notices that telangiectasis is particularly prone to occur after radia-

tion of keloids. The technique employed is as follows: A gap of 18.75 centimetres (seven and a half inches) is used; five milliamperes of current, seventy-five to one hundred seconds and a skin distance of 22.5 centimetres (nine inches) are employed; no filters are interposed and the treatment is repeated at three-weekly intervals.

#### Bismuth Treatment of Syphilis.

D. STEEGMÜLLER (*Klinische Wochenschrift*, April 2, 1925) reviews the histories of two hundred patients treated in his clinic. Two injections generally caused the disappearance of spirochaetes from the secondary lesions. Good results were also obtained with congenital syphilis and in seven cases of tabes the patients stated they felt much better. No toxic effects were observed beyond a few cases of stomatitis. Owing to its better tolerance and lesser toxicity bismuth can be used in preference to mercury and arsenic in all stages of the disease. Time alone will tell whether its curative effects are as permanent.

#### Cutaneous Lesions Following Bismuth Injections.

W. KERL (*Wiener Medizinische Wochenschrift*, February 7, 1925) describes a severe case of dermatitis following a course of bismuth injections. Contrary to the views of many observers bismuth is not free from danger, though it probably is not accompanied by the same risks as "Salvarsan." French observers have divided the lesions into four groups: Generalized exfoliative dermatitis, scarring erythema, a papulo-squamous erythema and an urticaria. The first group gives always a severe clinical picture, whilst in the others the course is much milder and of shorter duration.

#### Lichen Microsporicus.

CLARK W. FINNERUD (*British Journal of Dermatology and Syphilis*, February, 1925) states that the classical clinical manifestations of microsporosis are usually seen only as a result of the action of the small spored fungi of human origin, more commonly the *Microsporon audouini*. They consist of the slightly erythematous, discoid, scaly patches of partial alopecia of the scalp in children. Recently, however, atypical manifestations of microsporia due to fungi of human origin have been observed. In the recent Berlin epidemic and the current Vienna epidemic in which *Microsporon audouini* was the exciting cause, every transitional type from *tinea tonsurans vesico-pustulatus* to the definite kerion was seen. Also definitely atypical was the appearance in a large percentage of cases of the microsporid infection of the glabrous skin. The recent Vienna epidemic has made possible the study of a previously but slightly observed form of atypical microsporia in association with a generalized exanthem

of self limited course. The lightest form of constitutional disturbance in microsporia presents no exanthem and is designated as *forme fruste*, the symptoms frequently following epilating doses of X-rays and consisting of a mild fever, headache, weakness and joint pains. An experimental confirmation of the occurrence of *forme fruste* was furnished by Jessner who demonstrated a fungus in the blood in a case of *trichophytosis barbae* without exanthem. Another type of microsporosis is also described associated with an exanthem of general distribution; these generalized exanthemata almost exclusively occur in patients with a superficial more or less highly inflamed *tinea tonsurans capitis*. The clinical appearance of the microsporid exanthemata, although not so variable as the trichophytides, is not completely uniform. In general two types of exanthem could be distinguished. One is a lichenoid form, *lichen microsporicus* consisting of pin-head sized, bright red, solitary or grouped follicular papules most of which are capped in a day or two by a delicate scale. The disorder usually reaches its height of development in two to four days when the process of involution sets in and this is generally completed in two or three weeks. In the second or eczematoid form oval or bright red efflorescences occur, varying from spots a few millimetres in diameter to patches as large as the finger nail and resembling roughly *pityriasis rosea* or seborrhoeic dermatitis. The lichenoid exanthemata affect chiefly the sides of the trunk, middle third of the back, the chest in front as well as the extremities, especially on the flexor surfaces and more rarely the face. Jadassohn first assumed for the pathogenesis of the exanthemata an ectogenous dissemination of the fungi from the head focus. This hypothesis has now been relinquished and Bloch's view that the trichophytides are due to haemogenous dissemination of the toxins of the fungi has been substituted. This theory is based on experiments carried out after the intravenous injection of patients with large doses of antigen and the production of typical trichophytides. Jadassohn and his school finally assumed a haemogenous origin of trichophytides and they believe the eruption to be due chiefly to the migration of the fungus elements into the skin. The possibility of such a pathogenesis was strengthened by the demonstration of the fungus in a lymphatic gland by Sutter, in the blood by Ambrosoli and Jessner, in histological sections by Brussard and by the results of blood culture by Arzt and Fuchs. Several diseases must be considered in the differential diagnosis of microsporid. They resemble most closely the trichophytides, the body eruptions being practically identical. Favides occurs as a general exanthem in favus. The others are *lichen scrofulosorum*, *lichen syphiliticus*, *pityriasis rosea*, eczematoid and seborrhoeic dermatitis.

## RADIOLOGY.

### Treatment of Nævus.

HUGH MACKAY (*Journal of Radiology*, September, 1924) discusses the treatment of nævi by radium. Though of congenital origin, nævi may appear at birth or may not appear until adult life. They usually increase slowly in size, keep pace with the body growth and stop growing when full stature is reached. Carbonic acid snow is valuable in the treatment of the superficial type, but it is a painful form of treatment and is often followed by septic infection. Radium is the most suitable remedy and in the case of young children the treatment may be carried out during sleep. For capillary nævi a five or ten milligramme plaque, the face of which is protected by oiled silk or dental rubber dam, is kept moving over the area; about five minutes' exposure is allowed over the whole surface. No further application should be made until all reaction has disappeared; this occurs usually in about six weeks. The deep or cavernous type of nævi needs a two millimetre brass filter and twelve millimetres to twenty-five millimetres wood or gauze filter; needles of 12.5 milligrammes of radium element may be buried in the growth about two centimetres apart and may be left *in situ* for from three to five hours. The port wine nævus is very difficult to cure and the prognosis is unfavourable. Hairy nævi should be excised. Pigmented nævi of the melanotic type should be left alone if wide excision is impossible.

### Acute Osteomyelitis.

F. W. O'BRIEN contributes an article on the diagnosis of acute osteomyelitis by X-rays (*Boston Medical and Surgical Journal*, September 11, 1924). It is not possible to make a diagnosis in acute conditions of twenty-four to seventy-two hours' standing, for the obvious reason that the skiagram will not reveal microscopical changes and demonstrable changes do not appear until six days have elapsed. By this time necrotic changes are seen. Therefore, the surgeon must rely on the clinical signs and place no reliance on the failure of a radiologist to confirm the diagnosis. An X-ray examination, however, should always be made in order to exclude fracture or new growth. Acute osteomyelitis is always a metastatic bacterial infection secondary to some primary focus in the body and the causal organism is usually the *Staphylococcus pyogenes aureus*, but other organisms are sometimes found. When necrotic bone is present, it is demonstrable in skiagrams as reduced areas of density in small, scattered patches.

### Myositis Ossificans Traumatica.

GEORGE MAKINS (*British Journal of Radiology*, September, 1924) opened a discussion on *myositis ossificans traumatica*. He considers this condition to be misnamed, as it is not an inflammatory condition, but rather an instance of redundant and misdirected regeneration or repair, while the muscle itself plays a purely passive

part. The cause of the condition is a lesion of the muscle due to a blow, strain or over-action; the injury need not be of severe degree. The *quadriceps extensor* and the *brachialis anticus* are the commonest sites, but any muscle attached to bone may be involved. "Rider's bone" and similar ossification of muscle insertion must be distinguished from the condition under discussion. In true cases there is an injury to the periosteum of sufficient severity to allow of the escape of bone cells into the neighbouring muscle sheath and also there is haemorrhage from the bone and surrounding tissues with rupture of the muscle sheath. In the early stages connective tissue is found in a state of active proliferation, while chondroblasts and osteoblasts (suggestive of metaplastic bone formation) and numerous bone cells are noted. Muscle cells are found in varying stages of degeneration. Later a mass of cancellous bone is found surrounded by cicatricial tissue.

### X-Rays in Pertussis.

RALPH D. LEONARD (*Radiological Review*, September-October, 1924) contributes an original article on the treatment of the paroxysmal stage of whooping cough by radiation. Four hundred cases are included in the series and the diagnoses made were all by accepted clinical methods. Patients were exposed every forty-eight hours for three exposures, two to the front and one to the back of the chest. A skin distance of sixty centimetres (twenty-four inches), five milliamperes of current for five minutes, at about sixty thousand volts pressure and one millimetre aluminium filter were the factors employed; the thyroid gland was always covered with a lead screen. The paroxysms were relieved in 75% of the patients; the younger the child, the greater was the degree of relief. Vomiting was abolished. The duration of the disease was not shortened. A radiographic examination of the chest of each patient was carried out and enlargement of the bronchial glands, peri-bronchial thickening and congestion were detected. Signs of broncho-pneumonia were present in 25% of the patients. The glandular enlargement diminished rapidly under radiation.

### Sella Turcica.

J. D. CAMP (*American Journal of Roentgenology*, August, 1924) contributes a paper on the normal and pathologic anatomy of the *sella turcica* as revealed by skiagrams. The author refers to the liability to faulty projection on to the film and lays stress on the importance of care in adjusting the head. He gets most satisfactory pictures by centering a small cone along Reid's base line, 2.5 centimetres in front and 1.88 centimetres above the external auditory meatus. The sagittal plane of the head must be parallel with the film and perpendicular to the central ray, otherwise the *sella turcica* will be distorted. The use of the Potter-Bucky diaphragm is

recommended. Variations in size occur and an average measurement is given as 1.15 centimetres antero-posteriorly and 1.02 centimetres depth. The author describes the various alterations in contour of the *sellae* and in shape of the clinoid processes. Illustrations of various normal and pathological states are included in the article. Bridging between the anterior and posterior clinoid processes occurs in 5.5% of subjects.

### X-Rays and Corns.

A. HOWARD PIRIE (*American Journal of Roentgenology*, November, 1924) states that a corn may be treated and cured with one suitable large dose of X-rays. The dose is four epilation dose applied in one sitting without filtration. A hole is cut in a sheet of lead so that the corn only is irradiated. Thin corns need less dosage. Tight shoes must not be worn after radiation. After four weeks the corn is generally loosened and can be picked out. No patients have reported recurrence after this treatment.

### Gastric Syphilis.

A. S. MERRILL (*American Journal of Roentgenology*, November, 1924) describes ten cases of probable syphilis of the stomach. Gastric syphilis is essentially a late tertiary lesion, probably the result of ulceration due to endarteritis or to gummatous degeneration. There is secondary sclerosis and deformity. The condition is generally considered to be rare. Some authorities hold that it occurs in from 1.5% to 1% of patients operated on for ulcer. Symptoms vary, but distress generally follows eating and continues until the stomach is empty. Pain is not influenced by alkalis, but vomiting gives relief. Flatulence and loss of weight occur, but the cachexia is not great. Haemorrhage is rare. Appetite is good, but the patient refrains from eating owing to the distress caused. Gastric analysis shows hypochlorhydria or achylia. The X-ray picture is very suggestive of cancer. A reaction is obtained to the Wassermann test and the condition improves under anti-syphilitic treatment. Pyloric stenosis is rare, in fact the pylorus appears to be incompetent and the contents pass very freely out of the stomach. The duodenal cap often appears very large and dilated. The X-ray picture shows improvement after treatment.

### Bladder Diverticula.

H. B. SCARGILL reports two cases of diverticula of the urinary bladder (*British Journal of Radiology*, September, 1924). The author's technique was as follows. The bladder was well washed out, emptied by catheter and then filled with a 20% solution of sodium bromide. This filled both bladder and diverticula. Skiagrams were taken and then the bladder was emptied and another skiagram taken. One of the patients had two diverticula and the other a single diverticulum. Excellent skiagrams illustrate this report.

## British Medical Association News.

### SCIENTIFIC.

A MEETING OF THE SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Lister Hall, Hindmarsh Square, Adelaide, on April 30, 1925, DR. F. STEELE SCOTT, the President, in the chair.

#### Diabetes and Gangrene of the Foot.

DR. C. DUGUID showed a man, aged fifty-seven years, who was suffering from diabetes. On October 1, 1923, he had weighed sixty-three kilograms (ten stone) and had had severe gangrene extending across the sole of the right foot, the bones being laid bare. The blood sugar concentration had been 0.3%. The urine had contained 6% of sugar with a total quantity of 130.5 grammes. The patient had been dieted according to the method advised by Leyton and "Insulin" had been given. The "Insulin" and the diet had been increased together and regulation of the fat had given more trouble than that of the carbohydrates. The slough had finally separated and the foot had healed. In three months the man had returned to work, but after an interval of five months gangrene of the left great toe had followed an injury and a refusal to adhere to the prescribed diet. This setback had impressed the patient that his life had its limitations and that dietetic control was essential. At the time of demonstration he weighed 64.4 kilograms (twelve stone). The "Insulin" had been gradually diminished in amount and then discontinued. For approximately a year the patient had been hard at work buying and selling fish on a large scale. This entailed much worry, but the patient's urine had been sugar free for the whole of this period.

#### Myxoedema.

DR. A. A. LENDON read a paper entitled: "Myxoedema" (see page 1).

SIR JOSEPH VERCÖ read a paper entitled: "Myxoedema" (see page 2).

DR. W. T. HAYWARD, C.M.G., thanked the speakers for their excellent and complete papers. With regard to the necessity for patients who had had myxoedema to take thyroid extract for the rest of their lives, he remembered cases in which patients had recovered and had eventually given up their thyroid without any ill-effect.

DR. W. T. VERCÖ also congratulated the speakers and said that in regard to a history of heredity he had had a patient with myxoedema whose second son and also the third son had developed myxoedema. He also suggested that as a patient grew older possibly the amount of thyroid required by the body was less and so he might diminish or even discontinue taking his thyroid with impunity. He also said that patients with exophthalmic goitre might develop myxoedema later and asked if members knew of cases.

DR. C. T. C. DE CRESPIGNY, D.S.O., asked if in the early days any thyroid grafting had been done. He quoted a case of which Professor C. J. Martin had told him of a child who had been grafted with a sheep's thyroid thirty years previously. Professor Martin had met the nurse who had looked after the patient many years later and she had told him that the boy had developed normally and was then serving on active service. This was the more remarkable as the graft was a heterogenous one.

With regard to the association of hypothyroidism and other diseases he had attended a corpulent man with signs of hypothyroidism who suffered from attacks of gout. He had been given thyroid extract and had lost a lot of his superfluous weight and his gout attacks occurred only about every eighteen months instead of at very frequent intervals. Two of the patient's sisters were affected by hypothyroidism and two had rheumatoid joints which were improved when they were taking thyroid extract. He did not know of other cases of this relation.

DR. C. DUGUID quoted the history of a patient who had consulted him for sterility. He had recognized the signs

of hypothyroidism. She had been put on thyroid and ovarian extract and in three months was pregnant. The medicine had been stopped at the fourteenth week for fear of abortion and she had suddenly got eclampsia at seven and a half months. Cæsarean section had been performed with a satisfactory result. This was of interest as thyroid was used by many in the treatment of eclampsia.

DR. J. W. BROWNE said that on two occasions he had come across young women who had complained of attacks of faintness and had rapid pulses. He had been at a loss to account for these symptoms until the nurse had found a box of thyroid tablets secreted under their pillow. He asked if it could become a habit with some people to take thyroid for the sensation of the well-being produced in the same way as some individuals took morphine.

DR. A. A. LENDON, in replying to Dr. C. Duguid alluded to Dr. Oiphant Nicholson's views on the relationship between thyroid deficiency and the incidence of eclampsia and the advantages of thyroid medication as a preventive measure. With respect to the point raised by Dr. de Crespiigny as to implantation the results seemed to show that atrophy of the graft was to be expected sooner or later. The late Dr. George Rennie had expressed the opinion in 1894 that implantation was likely to become the best method of treatment. In reply to Dr. W. A. Verco, he had reported in his original paper a case of myxoedema, in which eleven years previously the patient had presented the characteristics of exophthalmic goitre. Dr. Lendon corroborated Sir Joseph Verco's experience with regard to uterine haemorrhage as an accompaniment of myxoedema and he had seen acute mental trouble in another instance. A dwarf "with two sets of teeth" had been mentioned in his previous paper. Dr. Lendon commented also on the modern endeavour to substitute the adjective "thyroid" for the old-fashioned "thyroid": it was true that Galen used Θύρεο-έλασις, but many years of use had sanctioned the less accurate, but more familiar word.<sup>1</sup>

SIR JOSEPH VERCÖ in reply to questions and suggestions said that he had no personal experience of thyroid grafts as a cure. In corpulence (apart from myxoedema) though some reduction in weight occasionally followed the use of thyroid tablets, it was comparatively slight and they were generally soon abandoned in favour of other and more reasonable means. He had not met with any instances of surreptitious use of thyroid extract due to an acquired craving for it, such as occurred with alcoholic and hypnotic drugs. He had never treated post-natal adenoids or enlarged tonsils medically with thyroid extract. They were easily and quickly removed by surgical operation and when carefully and thoroughly extirpated seldom returned. In reference to heredity it would appear that a man under Dr. Lendon's care whose photograph had been shown that evening was a son of the lady referred to in the second paragraph of his (Sir Joseph's) paper. Her husband had rapidly amassed a fortune in share dealing. When first seen she had been jocularly told that she would soon be about again and able to preside at the wash-tub. Her husband had lost his wealth as rapidly as he had acquired it and later the lady had informed her medical attendant that he was as good a prophet as he was a doctor, it was her good fortune to be well and able to take her part in the weekly washing. Her son it seemed was later the myxoedema patient under Dr. Lendon's care.

#### Historical Sketch.

DR. A. A. LENDON read a paper entitled "The Tragedy of Dr. Slater," dealing with an incident which occurred on Kangaroo Island in 1836.

A MEETING OF THE TASMANIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held in the Museum, Hobart, on April 14, 1925, DR. T. BUTLER, the Vice-President, in the chair.

<sup>1</sup>The journal adopts the more accurate and less familiar term.

**Diathermy.**

DR. F. STANSFIELD read a paper entitled: "Diathermy or Thermo-Penetration in the Treatment of Disease" (see page 5).

DR. W. W. GIBLIN, C.B., congratulated Dr. Stansfield on his able and instructive paper. He wished to comment on two points in reference to his patient with adenoma of the rectum mentioned by Dr. Stansfield. The most striking feature had been the immediate change in the patient's general condition from one of acute toxæmia to a state of well-being with no toxic signs. The second point was the absence of shock. No surgical interference would have been of any use unless a complete Kraski's operation had been performed; twenty-four hours after the application of diathermy instead of being in a state of profound shock the patient had been immensely improved in every way.

DR. E. A. ROGERS laid stress on the usefulness of diathermy in the treatment of haemorrhoids, the absence of pain and haemorrhage being the most striking features.

**MEDICO-POLITICAL.**

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Walter and Eliza Hall Institute, Melbourne Hospital, on April 1, 1925, DR. J. W. DUNBAR HOOPER, the President, in the chair.

**Procedure in Passing Resolutions as to Professional Conduct.**

On behalf of the Council, DR. HOOPER presented the revised rules as to the procedure to be adopted in passing resolutions as to professional conduct. The revision was the outcome of very careful consideration on the part of a subcommittee of the Council and as would be remembered, presentation to the Branch of the rules in their present form had been deferred from the meeting of February 11, 1925.

DR. J. NEWMAN MORRIS moved:

That the Branch approves of the revised rules relating to the procedure to be adopted in passing resolutions as to professional conduct as brought forward by the Council.

DR. MORRIS said that a copy of the rules had been issued to every member of the Branch. They were based on those of the parent Association and were designed to simplify procedure in ethical matters. As far as could be seen they provided for every kind of breach of ethical conduct and their adoption by the Branch would be of great assistance to the Council.

DR. A. L. KENNY seconded the motion which was carried unanimously.

The following are the rules adopted.

**RULES.**

1. For the better attainment, within the area of the Victorian Branch, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be deemed to be part of the business of the Branch to consider questions of professional conduct and to pass, in accordance with its rules, resolutions upon such questions which shall be binding upon the members of the Branch.

2. Every question of professional conduct referred to the Branch shall be deemed to be referred to the Branch Council and the decision of the Branch Council upon such questions shall be deemed to be the decision of the Branch.

No question of the conduct of an individual member of the Branch shall be considered by a general meeting of the Branch, except as provided by Rule 7 (c) of the Branch.

3. Proceedings on ethical matters in respect of the contravention of a resolution of the Branch shall be instituted only when the resolution in question has been

passed by the Branch in strict accordance with the following procedure:

- (a) At least fourteen days' notice of the terms of the proposed resolution shall be given to every member of the Branch prior to the meeting of the Branch at which such resolution is to be considered.
- (b) At the meeting the resolution shall be deemed to be carried if approved without amendment by a three-fourths majority of those present and voting and not otherwise.
- (c) Notice of the adoption of such a resolution by the Branch shall forthwith be sent to every member of the Branch, with a statement of the number of the members present and voting for and against the resolution.
- (d) If less than one-third of the members of the Branch are present when the resolution is put to the vote and if within seven days from the circulation of a notice of the adoption of such a resolution by a meeting of the Branch as above provided not less than ten members of the Branch shall request, by notice in writing to the Honorary Secretary of the Branch, that a poll of the members of the Branch be taken by post, a poll shall be so taken forthwith and in such cases the resolution shall be deemed to be carried if approved by two-thirds of those voting at such poll, and not otherwise.

4. (a) It shall be the duty of the Honorary Secretary of the Branch to notify every member of the Branch of every resolution as to professional conduct duly adopted by the Branch in accordance with these rules; and it shall rest in the discretion of the Branch Council to cause any such resolution or resolutions to be brought to the notice of any member of the profession residing within the area of the Branch who is not a member of the Association.

(b) It shall be the duty of the Honorary Secretary of the Branch to notify every member of the Association coming to reside within the area of the Branch and every newly elected member of the Branch, of every resolution as to professional conduct duly adopted by the Branch in accordance with these rules; and further, it shall rest in the discretion of the Branch Council to cause any such resolution or resolutions to be brought to the notice of any member of the profession who comes to reside within the area of the Branch who is not a member of the Association.

5. The Branch Council may:

- (a) Cause to be brought to the notice of any other Branch of the Association a resolution of the Branch as to professional conduct and may request support from such Branch with a view to making the operation of such resolution more effective.
- (b) Cause to be brought to the notice of every member of the Branch and, if thought fit, to every member of the profession residing within the area of the Branch, any resolution as to professional conduct adopted by any other Branch, of which the Branch shall have received official notice. This rule shall not apply to resolutions relating to the professional conduct of individual practitioners.

6. If a resolution of the Branch shall have reference to the terms or conditions upon which practitioners shall accept or hold appointments of any kind, it shall be the duty of the Honorary Secretary of the Branch, when notifying members of the Branch of the adoption of such resolution, or when bringing such resolution to the notice of any member of the profession residing within the area of the Branch who is not a member of the Association, in pursuance of these rules, to request those practitioners who then hold appointments of the kind in question, upon terms or under conditions inconsistent with the resolution, to take the necessary steps to terminate such appointment in accordance with the terms of their engagement, or to secure such modifications of the terms or conditions of such appointments as shall be necessary for compliance with the resolution and no further action shall be taken

upon the resolution under these rules with respect to such practitioner until the expiration of a period of one calendar month from the time when such request was made, or such longer period not exceeding three months as Branch Council may decide.

If any practitioner shall within such period satisfy the Honorary Secretary of the Branch that he has given such notice as is required under the terms of his engagement to terminate such appointment or to so modify the terms thereof as to bring them into accord with resolution of Branch, no further action shall be taken under these rules with respect to such practitioner until the expiration of such notice.

#### Procedure of Inquiry into Complaints Regarding Professional Conduct.

7. Complaints regarding the professional conduct of individual members of the profession residing within the area of the Branch shall be sent in writing in duplicate to the Honorary Secretary of the Branch and must be signed by the person making the complaint.

8. It shall be the duty of the Honorary Secretary of the Branch, on receipt of a complaint regarding professional conduct, whether concerning a member of the Association or one who is not a member, immediately to refer the matter to the Branch Council for advice and instructions and to take no other action whatever in connexion with such complaint except on and in accordance with such advice and instructions as he may thus obtain from the Council, any provision otherwise contained in these rules notwithstanding. But in case of urgency the Honorary Secretary, after consultation with the President or Chairman of the Council, may refer the matter to the Ethical Committee.

9. In a case submitted by a member of the Association who considers that he has been (or is) directly affected by what he alleges to be the unprofessional conduct of another member, it shall be the duty of the Honorary Secretary of the Branch to ascertain forthwith whether the complainant has either personally or by letter, afforded the member against whom he makes complaint, a reasonable opportunity of explanation, and if this has not been done, to call upon him to do so. If the complainant fails to take this step within a week, the propriety of his action in having made the complaint may itself be made a matter for consideration by the Council of the Branch.

10. For the assistance of the Branch in investigating complaints regarding professional conduct a Committee, called the Ethical Committee, shall be appointed by the Branch Council at its first meeting after the Annual General Meeting of the Branch, consisting of the office bearers of the Branch Council for the time being *ex-officio*, with not less than five or more than seven other members of the Council. The Ethical Committee of the Branch of each year shall remain in office until the succeeding Committee is appointed.

11. A meeting of the Ethical Committee may be convened at any time by the convener of such Committee (or by the Honorary Secretary of the Branch), for the investigation of complaints regarding the professional conduct of individual members of the profession residing within the area of the Branch. Seven days' notice of such meeting shall be given to every member of the Committee and may be given to all parties concerned.

12. If any member of the Ethical Committee be personally concerned in a case as complainant or otherwise or be partner or assistant or principal of any person so concerned, or have otherwise such personal interest in the case as, in the opinion of the Committee, would render it undesirable that he should take part in any investigation of that case, he shall retire from the Committee during the investigation of the case and the Council may appoint some other member of the Branch who is not so interested, to act in his stead.

13. When the investigation of a complaint against a member regarding professional conduct has been sanctioned by the Branch Council, the Ethical Committee of the Branch shall investigate the facts of the case and shall take such evidence, whether written or oral, as shall be

deemed necessary for this purpose. Copies of documents furnished by any party to a case for the consideration of the Committee shall be supplied by the Honorary Secretary of the Branch to the other parties concerned. In the case of non-members, the furnishing of such documents shall be at the discretion of the Committee. All parties to a dispute may be invited to attend the meeting of the Committee at which the case is to be investigated and it shall be the duty of the Committee, whenever desirable, to bring the parties into personal conference. It shall be the duty of the Ethical Committee and its officers to act in accordance with the instructions received from the Council.

14. In all cases the Ethical Committee of the Branch Council shall, after due investigation, present to the next Ordinary Meeting or to a Special Meeting of the Branch Council, at its discretion:

- (a) A report of the facts as found by the Committee from the evidence placed before it and
- (b) A recommendation to the Branch Council in one of the following forms:
  - (i.) That the Branch Council express the opinion that the complaint has not been established.
  - (ii.) That the Branch Council express the opinion that no offence has been committed against the rules (or resolutions) of the Branch or the decisions of the Association or the generally accepted principles of professional conduct and that no action be taken.
  - (iii.) That the Branch Council express the opinion that the complaint is frivolous and that the case be dismissed.
  - (iv.) That the Branch Council express the opinion that \_\_\_\_\_ has committed an indiscretion or error of judgement, but that his conduct does not call for censure.
  - (v.) That the Branch Council express the opinion that \_\_\_\_\_ has violated:
    - (1) The rules (or resolutions) of the Branch or the decisions of the Association and/or
    - (2) The generally accepted principles of professional conduct;
 but that in consideration of faults on the part of others concerned, the case be dismissed.
  - (vi.) That the Branch Council express the opinion that \_\_\_\_\_ has violated:
    - (1) The rules (or resolutions) of the Branch or the decisions of the Association and/or
    - (2) The generally accepted principles of professional conduct;
 and resolve that he be and hereby is, censured.
  - (vii.) That the Branch Council express the opinion that the conduct of \_\_\_\_\_ has been or is:
    - (1) In contravention of the rules (or resolutions) of the Branch or the decisions of the Association and/or
    - (2) Detrimental to the honour and interests of the Association and/or
    - (3) Detrimental to the honour and interests of the medical profession and (if a member)
    - (4) Resolve that he be informed of this finding of the Branch Council and allowed until \_\_\_\_\_ to reconsider his position; that the Ethical Committee of the Branch be instructed to report in due course to the Branch Council upon his reply, if any, and that if upon such further report the Branch Council shall consider his reply unsatisfactory or if no reply be received within the time specified, the propriety of his remaining a member may be considered.

(viii.) That the Branch Council express the opinion that the conduct of \_\_\_\_\_ has been (or is):

- (1) In contravention of the rules (or resolutions) of the Branch or the decisions of the Association; and/or
- (2) Detrimental to the honour and interests of the Association; and/or
- (3) Detrimental to the honour and interests of the medical profession and (if a member)
- (4) Resolve that the propriety of his remaining a member may be considered.

15. All parties to a dispute may be invited to attend the meeting of the Branch Council at which the case is to be considered.

16. Members who have taken part as members of the Ethical Committee of the Branch Council in the investigation of a case shall be entitled to take part in the consideration by the meeting of the Branch Council of the Report of the Ethical Committee on such case and to speak and vote thereon as individual members of the Branch Council.

17. On the reception of the report and recommendations of the Ethical Committee by the Branch Council there shall be no discussion on the report of the facts as found by the Committee and no other than the following motions shall be in order on the report or the recommendation:

(a) That the Report of the Ethical Committee be approved and that the recommendation be adopted as follows \_\_\_\_\_.

(b) That the Report of the Ethical Committee be approved, but that the recommendation be amended as follows:

That the Branch Council express the opinion that \_\_\_\_\_ (one of the alternative forms of recommendation which it would have been permissible for the Committee to make may be inserted and no other).

(c) That the report and the recommendation of the Ethical Committee be referred back for further consideration.

18. A copy of the resolution of the Branch Council shall be sent by the Honorary Secretary of the Branch to each of the parties concerned.

19. If a medical practitioner shall make amends or express regret to the satisfaction of the Branch Council, it shall be competent to the Branch Council, after due notice, to rescind the resolution of censure passed under Rule 14 (b) (vi.).

20. It shall be the duty of every member of the Branch to afford all reasonable assistance to the Ethical Committee and to the Council of the Branch in the investigation of complaints regarding the professional conduct of individual members of the profession.

21. Subject to the provisions herein contained, no member of the Branch shall meet in consultation or afford any professional recognition to a medical practitioner who shall have been declared by resolution of the Branch Council to have acted in contravention of any rule or resolution of the Branch as to professional conduct, of which such practitioner shall be proved to have had notice in accordance with these rules or who shall have been declared by resolution of the Branch Council to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour and interests of the medical profession, provided that:

(a) This rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such officer.

(b) In circumstances of great urgency, affecting the life of a patient, a member of the Branch may accord such professional recognition to a practitioner whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Branch, who shall transmit them to the Ethical Committee of the Branch, and it shall rest with the Ethical Committee to consider and report to the Branch Council if in its opinion the circumstances were not such as to justify such action.

(c) If the Branch Council shall, after the adoption of a resolution of the kind defined in the first part of this rule, subsequently resolve that in the opinion of the Branch Council the conduct of the practitioner referred to in such resolution is no longer deserving of censure or that professional recognition should be no longer withheld from him, this rule shall cease to apply to such practitioner and the decision of the Branch Council shall be reported forthwith to any other authority of the Association which has already considered the case and shall be circulated in the same manner as the original resolution of censure.

#### NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Anderson-Stuart, Bouverie Primrose, M.B., Ch.M., 1923 (Univ. Sydney), c/o Perpetual Trustee Company, Limited, Hunter Street, Sydney.

Burnett, Roland Kent, M.B., Ch.M., 1923 (Univ. Sydney), 737, Darling Street, Rozelle.

Durie, Ethel Beatrix, M.B., Ch.M., 1923 (Univ. Sydney), Railway Street, Chatswood.

Maddox, John Kempson, M.B., Ch.M., 1924 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

Morgan, Andrew Distin, M.B., Ch.M., 1924 (Univ. Sydney), The Rectory, Bowral.

Murray, Angus Johnston, M.B., Ch.M., 1923 (Univ. Sydney), Coast Hospital, Little Bay.

Thompson, Roy William, M.B., Ch.M., 1925 (Univ. Sydney), Waimea Street, Katoomba.

Trainor, Desmond Coleman, M.B., Ch.M., 1925 (Univ. Sydney), 26, Campbell Street, Waverley.

Walters, Cecil Julian Manning, M.B., Ch.M., 1923 (Univ. Sydney), Coast Hospital, Little Bay.

Yeldham, Alan Edwin, M.B., Ch.M., 1924 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

THE undermentioned have been elected members of the South Australian Branch of the British Medical Association:

Deland, Charles Mervyn, M.B., B.S., 1924 (Univ. Adelaide), Adelaide.

Kelly, T. F., M.B., B.S., 1925 (Univ. Adelaide), Adelaide.

Naylor, R. L., M.B., B.S., 1925 (Univ. Adelaide), Adelaide.

Rees, Harold Mitchell, M.B., B.S., 1924 (Univ. Adelaide), Adelaide.

Reid, Arthur Douglas, M.B., B.S., 1924 (Univ. Adelaide), Adelaide.

THE undermentioned has been elected a member of the Queensland Branch of the British Medical Association:

Woodhead, Joshua Norman, M.B., 1924 (Univ. Sydney), Mount Perry.

## Medical Societies.

### THE MELBOURNE PÆDIATRIC SOCIETY.

A MEETING OF THE MELBOURNE PÆDIATRIC SOCIETY was held at the Children's Hospital, Melbourne, on November 11, 1924, DR. W. G. D. UPJOHN, O.B.E., in the chair.

#### Ankylosis of the Jaw.

DR. H. DOUGLAS STEPHENS presented two patients showing the results of operation for ankylosis of the jaw.

The first patient was a boy of eleven years with ankylosis of the right temporo-mandibular joint following a suppurative arthritis. Dr. Stephens had divided the condyle below the joint and had inserted a flap of temporal muscle. The result was an excellent one.

The second patient was a boy, aged ten years, who had become affected by an epiphysitis of the upper end of the right femur several years previously, at that time he had suffered from pyæmic abscesses in both temporo-mandibular joints with subsequent ankylosis. Dr. Stephens had resected both condyles and the boy was able to open his mouth about 1.8 centimetre (three-quarters of an inch).

DR. R. L. FORSYTH'S patient was presented by DR. KATE MACKAY. He was a boy of ten years who had been shown at a previous meeting of the Society in 1921. At that time he had suffered from generalized rheumatoid arthritis with glandular enlargement in the axilla. Various kinds of treatment had been instituted and included injections of "Novarsenobillon" and *Bacillus coli communis* vaccine subcutaneously. He had undoubtedly been improved by the vaccines but the greatest improvement had followed an attack of acute lobar pneumonia. He was presented at the meeting to show the great improvement which had occurred spontaneously in the preceding twelve months.

#### Cœliac Disease.

DR. LIONEL HOOD showed a patient of three and a half years with cœliac disease. The history was a typical one for wasting, diarrhoea with large, pale offensive stools, protuberant abdomen and infantilism had been prominent features. At the onset the condition had been associated with scurvy.

Dr. Hood gave a short description of this disease and summarized Professor Still's findings. He emphasized the variability of the diarrhoea in the patients he had seen. Dr. Hood quoted one patient whom he had observed for several years: although small he had developed well in other respects.

In the discussion which followed the presentation of the patient, DR. A. P. DERHAM quoted a patient whom he had observed for two years. This patient had been treated by reducing the starchy food and also the fat intake. Neither of these methods had been successful. He was being treated along the lines suggested by Dr. Reginald Miller with bile salts (sodium taurocholate and sodium glycocholate) 0.3 gramme (five grains) of each being given three times daily.

#### Pertussis.

DR. R. L. FORSYTH then opened a discussion on the treatment of pertussis. He considered whooping cough in children over four years a nuisance, in children between two and four years a serious disease and in infants under two years of age a tragedy. Among the most important sequelæ he numbered exhaustion, broncho-pneumonia, bronchial gland enlargement and tuberculosis.

The pathology of the disease was obscure. The site of infection was probably the larynx and the paroxysm of coughing was due to irritation of the epiglottis. By pulling forward the jaw it was possible to check the spasm. Dr. Forsyth was of the opinion that the infection of the lung was a secondary one rather than a primary one by the Bordet bacillus. Undoubtedly the Bordet bacillus was the initial cause and the extraordinary feature of the disease was the prolonged onset and length of time taken to manufacture immune bodies. Dr. Forsyth thought that the

lodgement of these organisms in comparatively bloodless areas might account for these long periods. Lymphocytosis was commonly observed in blood examinations during this infection and he thought it possible that certain methods of treatment were beneficial because they created a polymorpho-nuclear leucocytosis. Ether injections possibly acted in this way.

Dr. Forsyth considered the diagnosis difficult in many cases and he thought that the "squeeze out" cough was characteristic. He emphasized the point that there was often no whoop throughout the course of the disease.

The complication to be feared above all others was broncho-pneumonia.

The prognosis was bad in infants for it took them weeks or months to develop a resistance. In discussing the treatment by vaccines Dr. Forsyth favoured mixed vaccines. He had used large doses with the idea of getting a reaction and he quoted American authorities who used enormous quantities every second day. His own experience with vaccine had been a varied one and he had not been impressed by its value.

In concluding Dr. Forsyth emphasized the importance of sunlight, good food and an abdominal belt. He especially laid stress on the importance of feeding after vomiting and of pulling the jaw forward during a paroxysm. The children should be allowed to run about unless complications contraindicated. He thought that such sedatives as phenazone, terpine hydrate in alcohol and "Pinheroïn" were of use. In his opinion a good night's rest was essential.

DR. F. V. SCHOLES discussed the type of patient whose coughing was excessive and he questioned the advisability of checking the cough. His aim was to render the cough easier and he had found antipyrin useful. Ether injections had not been useful in his hands.

Dr. Scholes quoted a series of patients on whom vaccine therapy had been used successfully several years previously. These were sixteen infants with severe whooping cough. Eight had been given mixed vaccines commencing with one thousand million organisms and with increasing doses every three days until eight thousand million organisms were reached. The remaining eight had been treated with pure pertussis vaccine in a similar way. There were fifteen recoveries in ten days and only one patient had died. Since then other series have been treated without result.

During the recent epidemic vaccine therapy had not helped and belladonna, ether and other remedies had given no definite results.

Dr. Scholes emphasized the importance of fresh air and mouth toilet. The results at Fairfield with broncho-pneumonia following pertussis had been encouraging.

DR. REGINALD WEBSTER quoted experimental work on dogs infected with the Bordet bacillus. The organisms had been recovered from the lung in this experimental work. He elaborated his method of obtaining and culturing the organism. In previous years he had prepared a mixed vaccine but in 1924 a pure vaccine had been used.

In his opinion the causative organisms of most of the cases of broncho-pneumonia were streptococci or pneumococci.

Many of the empyemata complicating whooping cough were due to the haemolytic streptococcus. Dr. Webster emphasized the importance of having patients in an institution for observing the results of treatment as the statements of the parents were notoriously unreliable.

DR. ROBERT SOUTHBY read a paper entitled: "Vaccine Treatment of Pertussis" (see page 11).

DR. H. BOYD GRAHAM had found that the prophylactic use of vaccine was disappointing. He emphasized the importance of large doses of sedatives at night to obtain sleep and freedom from cough.

DR. A. P. DERHAM agreed with Dr. Forsyth as to the difficulties of early diagnosis. He looked upon febrile bronchitis and suffusion of the eyes as suspicious features. He considered large doses of mixed vaccine dangerous.

During the previous year at the Neglected Children's Department at Royal Park where there had been thirty-five to fifty-five children under the age of one year, one child had had a paroxysmal cough for two weeks and was then evacuated to the Infectious Diseases Hospital. The remaining infants had been given two injections of two hundred and fifty and five hundred million organisms (pertussis vaccine) at two day intervals. Of these twenty had developed whooping cough. He therefore agreed with Dr. Graham that the prophylactic use of vaccine was most disappointing.

DR. R. M. DOWNES, C.M.G., quoted the history of a patient with cerebral edema following whooping cough. The signs and symptoms had indicated a progressive cerebral haemorrhage and the child had been subjected to operation.

DR. B. L. STANTON emphasized the importance of attempting to control the vomiting in pertussis. He had found adrenalin (one in one thousand) in doses of 0.3 to 0.6 mils (five to ten minims) and "Novocain" 0.0012 grammes (one-fiftieth of a grain) in water three to four times daily, useful.

DR. HELEN KELSEY, DR. G. A. PENNINGTON and DR. J. J. SEARBY also contributed to the discussion.

#### THE MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA.

A MEETING OF THE MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA was held at the University of Adelaide on December 5, 1924.

##### The Action of Atropine.

It has been stated by Paskind in the *Journal of Laboratory and Clinical Medicine* (Volume VII., 1921, Number 2) that while small doses of atropine produce initial slowing of the heart beat in white races, in the negro no slowing or very slight slowing of the heart occurs in response to similar doses. From this Paskind infers that the negro is less susceptible to the central action of atropine than members of white races. In view of the ethnological affinities of the Australian aborigine it is therefore of interest to ascertain the reaction of this race to small doses of atropine.

PROFESSOR J. B. CLELAND and DR. I. B. JOSE reported the results of administration of 0.0012 grammes (one-fiftieth of a grain) of atropine to three aboriginal patients at the Adelaide Hospital. Of these one had shown no initial slowing of the heart at all, while two had manifested slowing amounting to ten and eleven beats per minute respectively, identical with the average slowing for white races reported by Paskind. In two out of three cases, therefore, the reaction of these aborigines had been the same as that of the white races, as might be expected from their racial affinities. The third patient resembled the negro in her insusceptibility to central stimulation by atropine, but Paskind had also reported occasional cases among whites (two out of twenty persons tested) in which the initial slowing of the heart beat after small doses of atropine was similarly absent.

##### Sensitivity to Proteins of Wood.

At the invitation of the President, MR. R. B. ALDERSEY communicated the fact that a local showcase maker had recently purchased a quantity of Queensland red bean timber which he said was as good as cedar and looked equally well, but appeared to be stronger. He employed eight men and he said that they all complained of serious nasal effects when they were working this timber. The first symptoms were running at the nose which lasted a day or so, then the nose bled and after a continuance of work several cases of copious flooding had occurred.

The tree was according to MR. BAILEY, the Director of the Botanic Gardens, *Castaneospermum Australae* and was quite common in Queensland.

The beans of the tree according to T. L. Bancroft were eaten by marsupials and in times of scarcity by the Australian Blacks after preparation by soaking in water, pounding and baking. A small piece of the bean, if eaten, caused diarrhoea and intense griping. It did this whether it had been previously soaked in water or roasted. No poisonous substance was removed by water. No parts of the plant were bitter. The tree exuded a light brown gum containing 15.4% arabin and 64.4% metarabin and traces of a yellow colouring matter. The wood had an unusually large quantity of dark heartwood prized by cabinet-workers, the outer wood was of a yellow colour. The foliage was thought to be deleterious to stock should they browse on it in times of drought.

PROFESSOR CLELAND stated that Maiden had reported several cases of a similar nature. This timber was frequently employed for furniture and had often been accused of deleteriously affecting the health of workers. Some patients were reported as having been affected after working for four or five days with this wood by a virulent influenza-like condition with vomiting and bleeding at the nose. The sawdust was reputed to cause eczema in certain sensitive persons.

DR. R. H. PULLEINE stated that such effects were not confined to the wood of this tree. The commonest cause of spasmodic rhinorrhea in timber workers was the dust from red pine and some workers could not use it at all on this account; Australian blackwood (*Diosyron mulleri*) was also deleterious to some workers. He had met with one case of a man who developed spasmodic rhinorrhea and bronchitic asthma after working with any wood. The only method of prophylaxis which appeared likely to be effective consisted in swilling out the nose immediately after working with the wood, especially after using the circular saw.

The question was raised whether or not the exceptional sensitiveness of certain workers might be due to anaphylactic sensitization to proteins in the wood.

DR. L. B. BULL drew attention to recent work by Hanzlik who made a distinction between anaphylactic and anaphylactoid conditions. In anaphylaxis the tissues were rendered permeable to the toxic agent by previous sensitization, while in anaphylactoid conditions the tissues were from the beginning abnormally permeable to certain toxic agents. This would explain why people were found to be sensitive to proteins with which they had never been in contact, as when very young infants were found to be sensitive to the proteins in egg white.

Howe had recently shown that the new born infant can assimilate the globulin in colostrum directly into its blood stream without preliminary digestion and it was furthermore known that diphtheria antitoxin might be administered by mouth to very young infants. Later in normal individuals the permeability of the intestinal wall was so far reduced that it would not admit the passage of undigested protein, but in individuals with the anaphylactoid condition this initial high permeability might be retained for an undue period.

PROFESSOR CLELAND drew attention to the deleterious effects recently reported to him by workers with wood impregnated with arsenic, as in Powellization of timber for sleepers. The effects which were evidenced only by some workers consisted in the formation of open sores which festered, smarting of the skin, headache, sore and inflamed eyes, itching on the body, sore lips and dryness of the throat. The only symptoms suggestive of arsenic poisoning were the sore and inflamed eyes.

Splinters of arsenic-impregnated wood, imbedded in cultures of staphylococcus caused no inhibition of the growth of the organisms, but it was conceivable that the arsenic might cause necrosis of adjacent tissue when splinters became imbedded in the skin and the necrosed tissue might subsequently be invaded by bacteria.

DR. R. H. PULLEINE pointed out that sensitiveness to arsenic varies very greatly in different individuals. Well-marked peripheral neuritis might arise from a dose easily tolerated by normal persons.

## University Intelligence.

### THE UNIVERSITY OF SYDNEY.

A MEETING OF THE SENATE OF THE UNIVERSITY OF SYDNEY was held on June 1, 1925.

The degree of master of surgery (Ch.M.) was conferred upon Mr. B. J. M. Harrison.

A cablegram was received from Professor Davidson Black, of Peking Medical College, regretfully declining the offer of the Chair of Anatomy at Sydney.

A communication was received from the Anatomical Society of Great Britain and Ireland expressing deep sympathy with the University in the irreparable loss sustained by the death of Professor Hunter.

A letter was received from the Director of Education notifying the University that the resignation of Professor Fawcett as a member of the Board of Examiners had been accepted by His Excellency the Governor in Council and that Professor O. U. Vonwiller had been appointed to the vacancy.

The Senate of the University of Queensland conveyed the following resolution passed at a regular meeting held on the 15th instant:

The Senate desires to extend its sympathy with the University of Sydney in the loss by death of Mr. H. E. Barff, who has filled the position of Warden and Registrar with conspicuous success for several years and who was at the time of his death a member of the Senate of that University.

The Premier having drawn attention to the proposed visit to Australia of Dr. Ales Hrdlicka, Curator of Physical Anthropology in the United States Museum, it was resolved that every facility should be given to Dr. Hrdlicka to visit the University museums.

The following appointment was approved: Dr. R. B. Holliday as Honorary Demonstrator in Anatomy.

The appointment of Sir John Macpherson as Professor of Psychiatry was extended from the 28th July, 1925, to 31st December, 1926.

The Senate has also decided to establish a Chair of Anthropology, the cost of such Chair to be defrayed from the sums granted by the Federal and State Governments. Professors J. T. Wilson (Cambridge), G. Elliot Smith (London) and Dr. A. C. Haddon (Cambridge) have been appointed as an advisory committee to advise the Senate as to the selection of a suitable occupant for the Chair.

## Naval and Military.

### APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Nos. 24, 25, 29, 33, 36, 39, 44 of March 12, 19, April 2, 23, 30, May 14, 28, 1925:

#### PERMANENT NAVAL FORCES OF THE COMMONWEALTH (SEA-GOING FORCES).

*Confirmation in Rank.*—Surgeon-Lieutenant (on probation) Kingsley Edric Fenton Dixon Hudson is confirmed in the rank of Surgeon-Lieutenant, with seniority in rank of 1st January, 1924.

#### AUSTRALIAN ARMY MEDICAL CORPS (PERMANENT).

Colonel G. W. Barber, C.B., C.M.G., D.S.O., V.D., Australian Army Medical Corps (Citizen Forces), to be Colonel and to be appointed Director-General of Medical Services, with pay at the rate of £1,500 per annum, inclusive of all allowances except travelling, with effect as from date of taking up duty; appointment to be for a period of five years.—(Ex. Min. No. 78.)

#### AUSTRALIAN MILITARY FORCES.

##### First Military District.

###### *Australian Army Medical Corps.*

The resignation of Captain E. G. Thomson, M.C., of his commission is accepted, 30th March, 1925.

*To be Lieutenant (provisionally).*—Walter Mario Butler, 4th April, 1925.

###### *Australian Army Medical Corps Reserve.*

Honorary Lieutenant B. H. Quin is transferred to the Australian Army Medical Corps Reserve, 3rd Military District, 10th May, 1925.

###### *Reserve of Officers.*

*To be Captains.*—Honorary Captains A. Anderson, V. McDowall and P. G. McReddie, from the Australian Army Medical Corps Reserve, 1st April, 1925.

Captain E. Meikle is transferred to the Reserve of Officers, 2nd Military District, 10th May, 1925; Captain J. Morlet is transferred to the Reserve of Officers, 3rd Military District, 10th May, 1925.

#### AWARD OF THE COLONIAL AUXILIARY FORCES OFFICERS' DECORATION.

*Reserve of Officers.*—Major S. S. Seccombe.

##### Second Military District.

###### *Australian Army Medical Corps.*

Captain (provisionally and temporarily) W. C. McClelland is re-transferred to the Australian Army Medical Corps reserve, and to be Honorary Major, 1st July, 1921. (In lieu of notice which appeared in *Commonwealth Gazette*, No. 79, of 13th October, 1921.)

The age for retirement of Lieutenant-Colonel (Temporary Colonel) E. S. Stokes is extended for a period of one year from 6th March, 1925.

###### *Australian Army Medical Corps Reserve.*

Honorary Captains G. W. Foster, R. N. S. Good and N. L. G. Wilson are transferred to the Australian Army Medical Corps Reserve, 3rd Military District, 1st May, 1925; the resignation of Honorary Major J. L. T. Isbister of his commission is accepted, 17th April, 1925.

Honorary Captain J. B. Cleland is transferred to the Australian Army Medical Corps Reserve, 4th Military District, 10th May, 1925; Honorary Captain J. G. Woods is retired under the provisions of Australian Military Regulation 152 (1), 21st May, 1925; Honorary Captain E. Feilchenfeld having changed his name by Deed Poll to Edward Field, his records in the Australian Military Forces are amended accordingly.

###### *Reserve of Officers.*

Captain B. Van Someren is transferred to the Reserve of Officers, 3rd Military District, 1st March, 1925.

Major B. Van Someren is transferred to the Reserve of Officers, 3rd Military District, 1st March, 1925. (In lieu of notice which appeared in *Commonwealth Gazette*, No. 24, of 12th March, 1925.)

Captain E. Meikle is transferred from the Reserve of Officers, 1st Military District, 10th May, 1925.

##### *Unattached List.*

Lieutenant-Colonel H. K. Denham, D.S.O., V.D., is transferred to the Reserve of Officers, 11th March, 1925.

#### AWARDS OF THE COLONIAL AUXILIARY FORCES OFFICERS' DECORATION.

###### *Australian Army Medical Corps.*

Lieutenant-Colonel J. H. Phipps, D.S.O.

##### *Unattached List.*

Major (Honorary Lieutenant-Colonel) J. S. Purdy, D.S.O.

##### Third Military District.

###### *Australian Army Medical Corps.*

Honorary Lieutenant-Colonel J. S. Purdy, D.S.O.

Major I. Blaubaum is appointed from the Reserve of Officers, and to be supernumerary to the establishment of Majors, with pay and allowances of Captain, 11th February, 1925; the provisional ranks of Captains R. Southby and N. M. Gutteridge are confirmed.

The age of retirement of Captain P. Shaw is extended for a period of one year from 1st January, 1925.

*To be Captain (provisionally).*—Albert Ernest Coates, 9th April, 1925; Lieutenant (provisionally) K. H. Hadley is transferred to the Australian Army Medical Corps Reserve, and to be Honorary Lieutenant, 31st March, 1925; the resignation of Captain G. E. Foreman of his provisional appointment is accepted, 30th March, 1925.

#### Australian Army Medical Corps Reserve.

Honorary Captain J. S. Thwaites is retired under the provisions of Australian Military Regulation 152 (1), 14th April, 1925.

Honorary Captains G. W. Foster, R. N. S. Good and N. L. G. Wilson are transferred from the Australian Army Medical Corps Reserve, 2nd Military District, 1st May, 1925.

Honorary Lieutenant B. H. Quin is transferred from the Australian Army Medical Corps Reserve, 1st Military District, 10th May, 1925.

#### Reserve of Officers.

Captain B. Van Someren is transferred from the Reserve of officers, 2nd Military District, 1st March, 1925.

Major P. S. Webster is placed upon the Retired List with permission to retain his rank and wear the prescribed uniform, 12th March, 1925.

Major E. A. Guymer is transferred from the Reserve of Officers, 4th Military District, 1st April, 1925.

Captains A. J. M. Fargie and John Gray are transferred from the Reserve of Officers, 2nd Military District, 1st May, 1925.

*To be Captain.*—Honorary Captain E. Field, from the Australian Army Medical Corps Reserve, 2nd Military District, 1st October 1920 (in lieu of notifications respecting this officer which appeared in *Commonwealth Gazettes*, Nos. 114, of 9th October, 1919, and 11, of 3rd February, 1921); Captain J. Morlet is transferred from the Reserve of Officers, 1st Military District, 10th May, 1925.

#### Fourth Military District.

##### Australian Army Medical Corps.

Captain R. C. Bassett is transferred from the Australian Army Medical Corps, 5th Military District, and to be supernumerary to the establishment pending absorption, 9th April, 1925.

#### Australian Army Medical Corps Reserve.

Honorary Captain J. B. Cleland is transferred from the Australian Army Medical Corps Reserve, 2nd Military District, 10th May, 1925.

#### Reserve of Officers.

Captain C. R. Wiburd is transferred from the Reserve of Officers, 2nd Military District, 10th May, 1925.

Major E. A. Guymer is transferred to the Reserve of Officers, 3rd Military District, 1st April, 1925.

#### Fifth Military District.

##### Australian Army Medical Corps.

Honorary Captain F. J. Clark is appointed from the Australian Army Medical Corps Reserve, and to be Captain (provisionally), 9th April, 1925.

Captain R. C. Bassett is transferred to the Australian Army Medical Corps, 4th Military District, and to be supernumerary to the establishment pending absorption, 9th April, 1925.

#### Australian Army Medical Corps Reserve.

Honorary Captain F. J. Walden is retired under the provisions of Australian Military Regulation 152 (1), 28th March, 1925.

Honorary Captain W. T. Dermer is retired under the provisions of Australian Military Regulation 152 (1), 14th May, 1925.

#### Sixth Military District.

##### Australian Army Medical Corps.

Major W. I. Clark, M.C., is restored to the authorized establishment of Majors, 1st December, 1924.

#### Reserve of Officers.

Captain E. S. Morris is transferred to the Reserve of Officers, 2nd Military District, 10th May, 1925.

## Obituary.

#### JOHN BRADY NASH.

THE death of Dr. John Brady Nash which was announced in our issue of June 13, 1925, came as a sudden shock to a wide circle of friends both in the medical profession and outside its ranks and to members of the community whom he had served for so many years.

John Brady Nash was the eldest son of the late Dr. Andrew Nash who practised for many years in Wallsend, New South Wales. He was born at sea near the Canary Islands in May, 1857. He received his early education in the first place from his father and subsequently at Saint Patrick's College, Melbourne. After returning to his father's home at Wallsend in 1877 he passed the matriculation examination at the University of Sydney in 1878. In August of that year he was sent in the Orient steamer *Lusitania* to Scotland in company with his friend Joseph Stapleton. He studied medicine at Edinburgh University and after a successful career as a student was admitted to the degrees of bachelor of medicine and master of surgery of Edinburgh University in 1882. He also became a member of the Royal College of Surgeons of England. After doing some special study in London, Dublin and Paris he and his friend Stapleton (they had graduated together) returned to Wallsend in February, 1883. It was thus that John Brady Nash became associated with the district in which he was to labour for many years and which was to benefit in no small measure from his foresight, energy and resource. He went into practice at Lambton, but when his father was killed in November, 1885, he took over the practice at Wallsend. Stapleton succeeded him at Lambton. In 1888 he obtained the degree of doctor of medicine of Edinburgh University for a thesis which he wrote at Wallsend.

Wallsend is situated in the centre of a busy coal mining district. Though it was not as large in the 'eighties as it is at the present time, its population was numerous and medical practice, if carried out conscientiously, was no sinecure. John Brady Nash was an enthusiast. He wished to do the best for his patients. There was no hospital at Wallsend and Nash determined to remedy this. He and others were so insistent that the present Wallsend Mining District Hospital was opened in April, 1892. During its construction the miners used to look askance at it and called it "Nash's white elephant." They soon, however, recognized its usefulness and today in its extended form it is indispensable to the community.

Much could be written of Nash's military activities. He joined the Fourth Infantry Regiment of Volunteers in 1885, receiving his commission as captain of the Lambton company in May of that year. After coming to Sydney in 1900, where he commenced practice as a surgeon, he still maintained his interest in military matters. When war broke out in August, 1914, he was one of the first to volunteer. He offered to go either as a combatant or as a medical officer. He actually left Sydney on November 24, 1914, as a lieutenant-colonel attached to Number 2 Australian General Hospital. The unit sailed on the Hospital Ship *Kyarra* and in due course arrived at Alexandria. He took an active part in the management and work of the Hospital in Egypt and later on went to Gallipoli where he served till late in 1915. He returned to Australia in December of that year as medical officer in charge of the troops on the *Themistocles*. Like all those who saw the actual state of affairs at Anzac, Nash was

thoroughly alive to the necessity for the regular reinforcement of the comrades still serving in the front line. Although he did not believe that the principle of conscription should be applied to Australia, he felt it his duty to support the introduction of the measure at the time of the referendum and often took his place on the public platform as its protagonist. He knew the need and in spite of the hostility of many in his audiences, did not hesitate to tell them plain truth.

John Brady Nash took an active part in the public life of the State. Shortly after his arrival in Sydney he was appointed a member of the Legislative Council. He took his duties here very seriously, gave of the best that was in him and was unflinching in the defence of truth as he saw it.

He took an interest in the activities of the medical profession and often expressed his view at meetings of the New South Wales Branch of the British Medical Association. He maintained his interest in the practice of surgery and carried out with zeal the duties which fell to him as honorary surgeon at the State Hospital at Lidcombe. He was also honorary surgeon to Saint Margaret's Hospital for Women. He was a member of the Medical Board of New South Wales and of the Board of Directors of both the Sydney and the Royal Prince Alfred Hospitals. His keenness may well serve as an example to those of the younger generation. The sympathy of the medical profession is extended whole heartedly to his four daughters who survive him.

#### FRANCIS PAIN.

It is with regret that we have to announce the death of Dr. Francis Pain on June 22, 1925. Dr. Pain formerly practised at Allora, Darling Downs, Queensland, and for the past four years has resided in Sydney.

#### Books Received.

**SYNOPSIS OF MIDWIFERY AND GYNAECOLOGY**, by Aleck W. Bourne, B.A., M.B., B.Ch. (Cam.), F.R.C.S. (Eng.). Third Edition, Revised and Enlarged: With numerous diagrams. 1925. Bristol: John Wright & Sons Limited. Crown 8vo., pp. vii. + 434. Price: 15s. net.

**TABULAE ANATOMOMO-COMPARATIVAE CEREBRI: A SERIES OF NINE COLOURED MAPS WITH DESCRIPTION**, Edited by Dr. C. U. Ariëns Kappers, Director of the Central Institute for Brain Research, Amsterdam. Amsterdam: The "Kosmos" Publishing Company. Royal 8vo., pp. 30.

**THE LIFE OF WILLIAM OSLER**, by Harvey Cushing. 1925. Volume I. Oxford: The Clarendon Press. Royal 8vo., pp. xiii. + 685.

#### Medical Appointments.

Dr. N. M. Gregg (B.M.A.) has been appointed Honorary Assistant Ophthalmic Surgeon to the Royal Alexandra Hospital for Children, Sydney.

Dr. Mitchell Henry O'Sullivan (B.M.A.) has been appointed Public Vaccinator at Casterton, Victoria.

Dr. John Maunsell has been appointed Medical Officer of Health at Plantagenet, Western Australia.

Dr. R. M. Buntine (B.M.A.) has been appointed Assistant Pathologist at the Children's Hospital, Carlton, Victoria.

#### Medical Appointments Vacant, etc.

FOR ANNOUNCEMENTS OF MEDICAL APPOINTMENTS VACANT, ASSISTANTS, *locum tenentes* SOUGHT, ETC., SEE "ADVERTISER," PAGE XVI.

**RENWICK HOSPITAL FOR INFANTS, SYDNEY:** Honorary Physicians (Two), Out-Patients' Department.

#### Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

#### Diary for the Month.

JULY 7.—New South Wales Branch, B.M.A.: Council (Quarterly).

JULY 7.—Tasmanian Branch, B.M.A.: Council.

JULY 9.—Victorian Branch, B.M.A.: Council.

JULY 9.—South Australian Branch, B.M.A.: Council.

JULY 9.—New South Wales Branch, B.M.A.: Clinical Meeting.

JULY 10.—Western Australian Branch, B.M.A.: Council.

JULY 10.—Queensland Branch, B.M.A.: Council.

JULY 14.—Tasmanian Branch, B.M.A.: Branch.

JULY 14.—New South Wales Branch, B.M.A.: Ethics Committee.

JULY 15.—Western Australian Branch, B.M.A.: Branch.

JULY 16.—Section of Neurology and Psychiatry, New South Wales Branch, B.M.A..

JULY 21.—Tasmanian Branch, B.M.A.: Council.

JULY 22.—Victorian Branch, B.M.A.: Council.

JULY 24.—Queensland Branch, B.M.A.: Council.

JULY 24.—Eastern Suburbs Medical Association, New South Wales.

JULY 28.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.

JULY 30.—New South Wales Branch, B.M.A.: Branch.

JULY 30.—South Australian Branch, B.M.A.: Branch.

#### Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

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